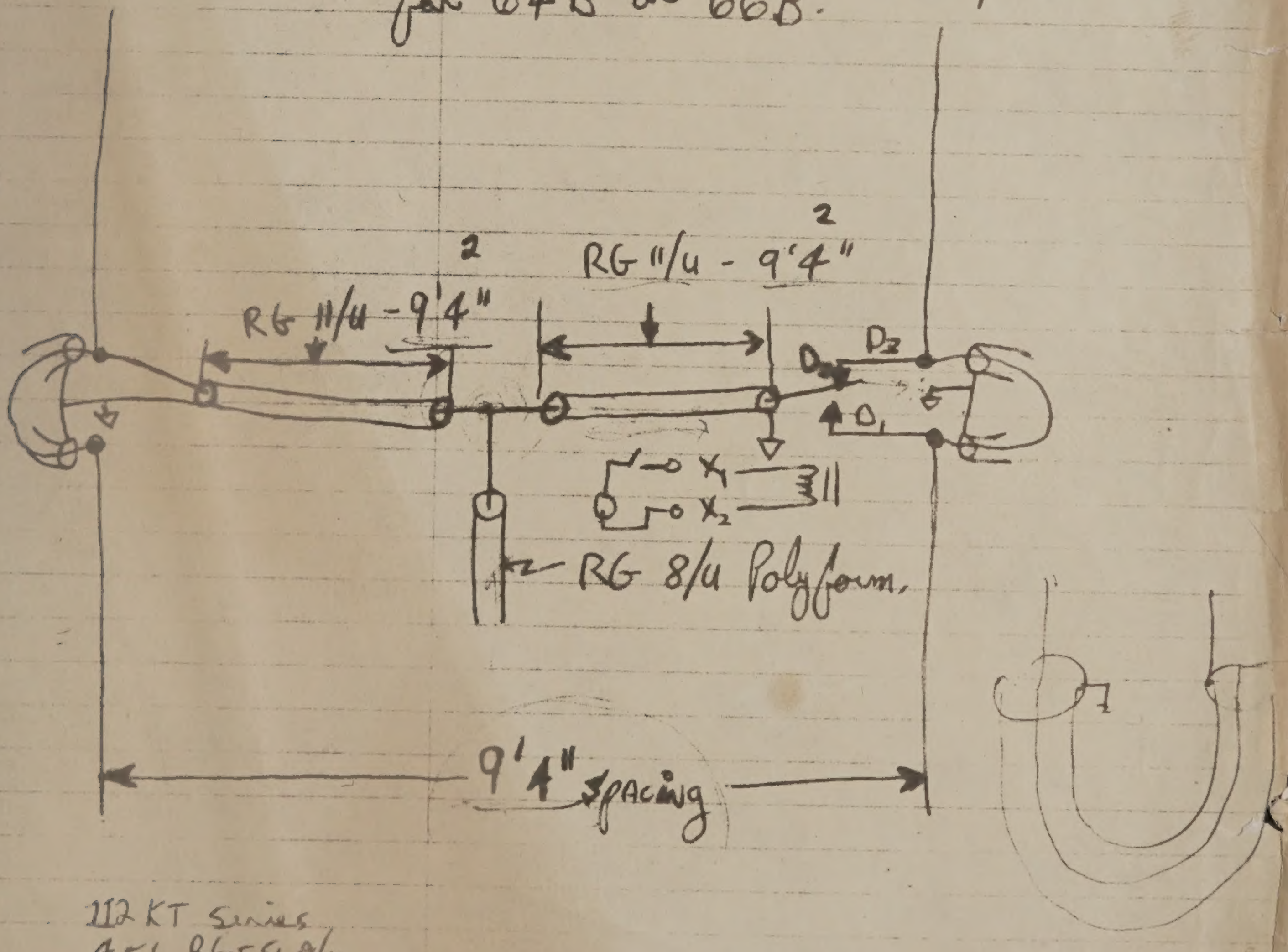
Hy-gain

Recommendations with regard to stacking two model 64B's and 66B's 6 meter antenna systems. At this spacing there will be no side lobes and maximum front to back. By utilizing a single pole double throw relay as shown, the forward pattern can be chosen for a null or maximum gain.

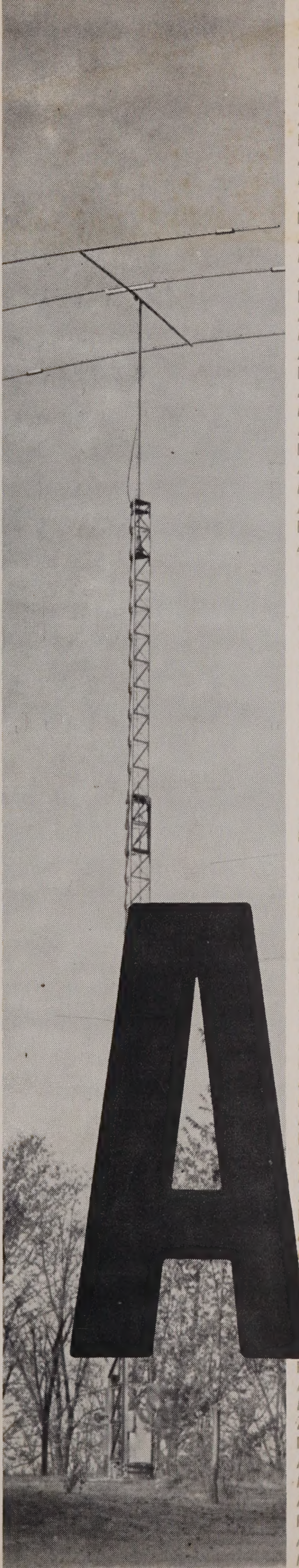
By following the diagram, coaxial integrity throughout the antenna will be maintained with a minimum amount of difficulty.

52-53 MHz stacked system.
for 64B or 66B.



212 KT Series
45' RG58 A/u.
125' RG 58 A/u.

Mosley Electronics, Inc • 1966 Catalog

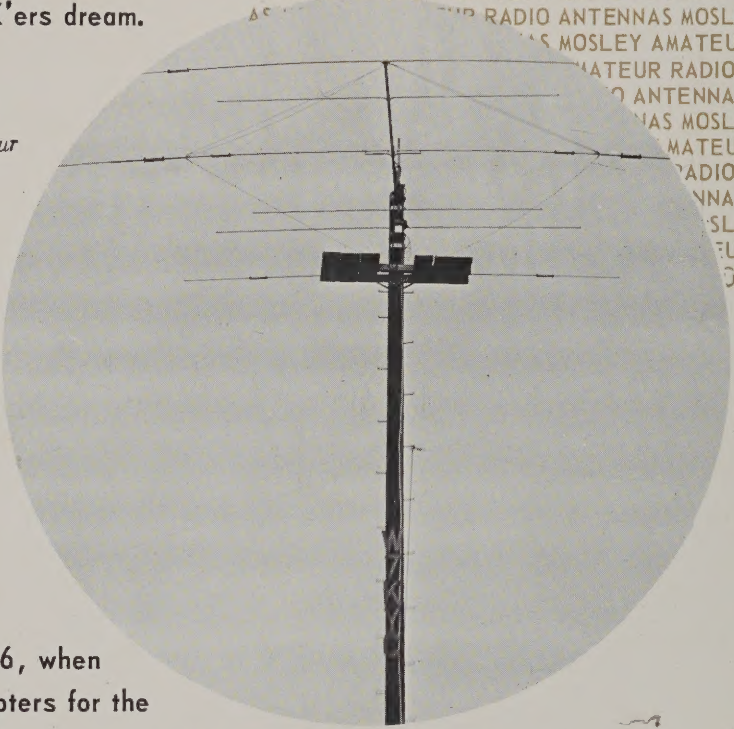


AMATEUR ANTENNAS

THE MOSLEY STORY

It was in 1918 in the Good Old Spark Days when Carl Mosley W0FQY became a ham. At this time the counterpoise . . . an unwieldy maze of wires had been conceived as a most advanced ground system. Now today the Mosley TA-33 and other ham antennas created by Mosley Electronics, Inc. are the DX'ers dream. Examples of Mosley installations:

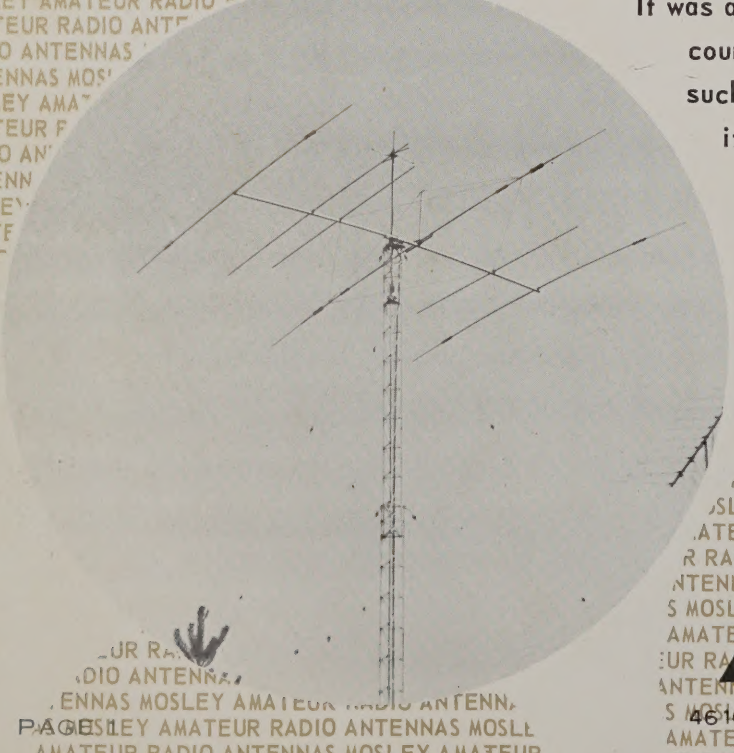
W7KYC is the call of the *Portland Oregon Amateur Radio club* sponsored by the Oregon Museum of Science and Industry. Antenna used is the Mosley TA-3640. This club station has logged stations from all parts of the world, mostly on 20 meters SSB.



Another proud Mosley antenna owner is W6PHF *David H. Palmer, Los Angeles, California.* His installation is also the Mosley TA-3640.

The story of Mosley Electronics, Inc. began reasonably early in the history of radio, in 1946, when Mosley began making adapters for the ¾" tube socket used extensively by amateurs at this time. The company name at this time was Mosley Electronic Specialties. Within a few months the business, which was operated from the Mosley basement, increased to the point where outside help was needed to stem the flood of orders.

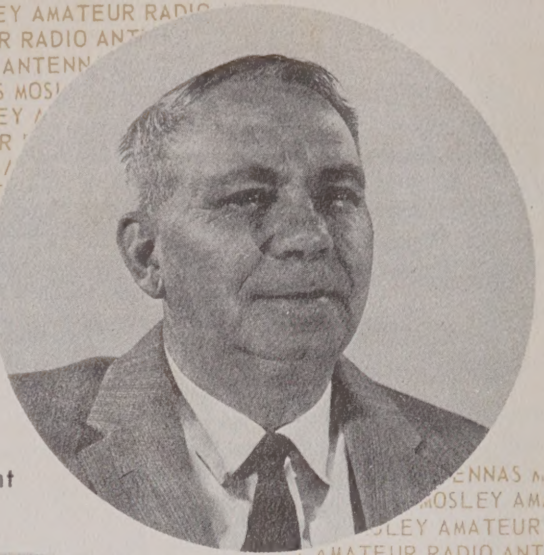
It was at this time TV stations were being built over the entire country resulting in a need for TV installation accessories such as feed-thru insulators, wall outlets and plugs. These items Mosley produced for the public, helping supply the growing need for commercially built TV accessories. Today a complete television accessory line is being produced by Mosley including wall switches and outlets in attractive decorator colors. In 1951 Mosley began manufacturing the famous 'Vest Pocket' ham antenna. It was this year the company was incorporated



Mosley Electronics, Inc.

under the name of Mosley Electronics, Inc. with Carl E. Mosley as President; and the factory was situated on Saint Charles Rock Road in Saint Louis. Later military and industrial antennas such as the WWV antenna for receiving time signals were developed adding another line to the already growing list of products produced by Mosley. About 1955 the incomparable Trap Master TA-33 amateur beam was introduced.

CARL E. MOSLEY
W0FQY K0AXS
PRESIDENT
AND MANAGER



Citizens Band was introduced in 1958 necessitating the development of CB antennas. Mosley Electronics, Inc. put amateur radio antenna experience to good use by introducing a new quality line of antennas designed for the CB'er. At this time Mosley Electronics, Inc. became located in a spacious modern building in West St. Louis County at 4610 North Lindbergh Boulevard. The original space was 25,000 square feet, 45,000 more feet of space was added in 1962. It was around this time Mosley began producing another line of antennas - - business band antennas.

OMA F. MOSLEY
V. P. AND SECRETARY

No detail is overlooked in the constant Mosley effort to supply the greatest antenna values possible to the Amateur Market. It begins with the selection of materials known to be capable of surviving the rigors of world-wide climatic conditions . . . from artic icing to typhoon driven salt air. Such materials are used in all antennas. Quality is never sacrificed to bring a good price.

EUGENE L. MOSLEY
V. P. AND CREDIT MANAGER

Mosley offers you a wide line of Ham antennas from which to choose plus Short Wave Listening, Citizens Band, Business Band, and commercial antennas. Whatever your antenna needs . . . think first of Mosley . . . the World's Leader in Quality communication antennas.

JACK R. MOSLEY *K0TEL*
V. P. AND ASST. MANAGER

Mosley Hams

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Jack R. Mosley, K0TFL	Vice President and Asst. Manager
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Printing	Paul A. King
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Mosley Electronics, Inc. 4610 N. LINDBERGH BLVD., BRIDGETON MO. 63042

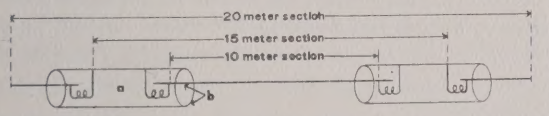
Table of Contents

THE MOSLEY STORY — Page 1-2
AT YOUR SERVICE — Page 3
WHAT ABOUT TRAPS — Page 4-5
TRAP-MASTER BEAMS — Page 6-9
CONVERSION KITS — Page 10
SCOTCH-MASTER BEAMS — Page 11
POWER-MASTER BEAMS — Page 12
NEW ANTENNAS — Page 13-14
TRAP-MASTER VERTICALS — Page 15-18
VERTICAL GROUND PLANE — Page 19
TRAP DIPOLE — Page 20-21
TRAP QUARTER WAVE ANTENNA — Page 22
MOBILE ANTENNAS — Page 23
COAX TERMINATION OUTLETS — Page 24
GENERAL AMATEUR ACCESSORIES — Page 25-26

What about ● TRAPS?

THE IMPORTANCE OF GOOD TRAP DESIGN

An antenna trap can be described as being *an application of a resonant circuit.* Such a trap, utilizing a parallel resonant tuned circuit, offers very high impedance at or near resonance and simply acts as an insulator to effectively cut off the element to a length resonant to the band being used. See *Fig. 1.*



Radiator element of Model TA-33 beam. Aluminum trap casing (a) is part of circuit and with element tubing provides capacity (b) for parallel resonant circuit. This principle used in all Trap Master antennas. See full explanation, page 7.

Fig. 1.

A trap can properly be considered the "weak link" in the chain of components that comprise a multi-band antenna. Any failure or malfunction of one of the traps will put the antenna out of operation or, at least seriously effect its performance capability. Thus, it is of paramount importance that the trap design be such as to assure stability of resonance in wide extremes of temperature and humidity and to exclude or inhibit dirt and moisture formation which could cause malfunction or breakdown.

Any variation in capacity or inductance in the trap's tuned circuit will cause the resonant frequency to shift. Therefore, each of these components must be firmly fixed and this can best be accomplished by winding the coil on grooved forms and by making the capacitor sections immovable with respect to each other. Traps used in MOSLEY *TRAP MASTER* antennas follow this good basic design as can be seen in the cut-away model photo, *Fig. 2.*

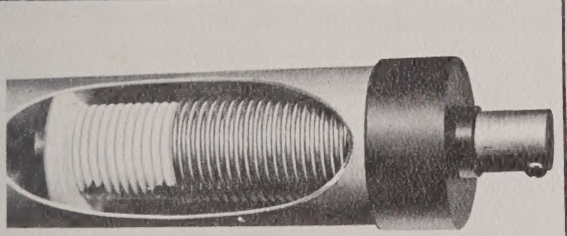


Fig. 2.

The coils in Mosley traps are space-wound of top grade copper wire on grooved forms molded of high-impact polystyrene. Ends of each winding are firmly secured with screws. The coil form is molded directly on the aluminum element and this element along with the outer aluminum trap casing comprise the capacitor. Because of this construction, the capacitor "plates" are completely fixed and cannot move in relation to each other.

MOSLEY traps "breathe" and, thus, cannot collect condensation. Traps that are tightly sealed encourage condensation and, since there is no place for the water to go, accumulates and sooner or later ruins the performance of the trap. It is possible to put into each trap an absorbant such as *silica gel* which will reduce free moisture content for awhile. This is but a "stop-gap" measure, though, since a given amount of such material can absorb only a limited amount of water and any additional condensation is free to collect and to wreak its havoc with the beam's performance.

In order to achieve long service life from your trap antenna, it is important to consider the material from which the traps are constructed. Unlike some traps which are either *open* or enclosed in some soft plastic, or other relatively short-lived material, MOSLEY traps are encased in aluminum which is not only completely impervious to weather, itself, but provides lifetime protection for the entire trap assembly!

Structurally, the configuration of MOSLEY traps promotes greater strength and rigidity of the entire array. Weight of each trap is distributed over a greater length of the element and the resultant slimness of the trap reduces wind resistance and, to some extent, torque.

● FEED SYSTEMS?

FEED SYSTEMS–THE SIMPLER, THE BETTER!

Despite popular belief, linear radiators, normally employed in 2 and 3 element parasitic arrays, have a driving point impedance of close to 52 ohms when open at the center. To feed such a radiator it is only necessary to connect a 52 ohm line at this point to achieve the best possible match of line to antenna.

However, because of certain design characteristics, some beam antennas require matching devices such as *Gamma* or *T-Match* systems or variations of these systems.

MOSLEY *TRAP MASTER* beams, however, are so designed as to not require such arrangements. This beam is fed by connecting the line directly to the open center of the radiator. Thus, an excellent match is achieved over the entire width of each Ham band resulting in extremely low SWR near resonant frequencies of each band and the ability to range from one end of the band to the other without excessive SWR.

By eliminating unwieldy matching devices, MOSLEY *TRAP MASTER* beams provide their users with stable and dependable operation without the necessity of frequent trips to the roof or up the tower to make readjustments.

● BALANCED or UNBALANCED RADIATORS?

BALANCED or UNBALANCED?

Another widespread misconception is the impression that radiators of this type cannot be fed with an unbalanced line such as coaxial cable and still maintain a balanced radiator and radiation pattern. This is a fallacy as can be seen by the directional pattern reproduced in *Fig. 3.* This pattern holds essentially

(Contd.)

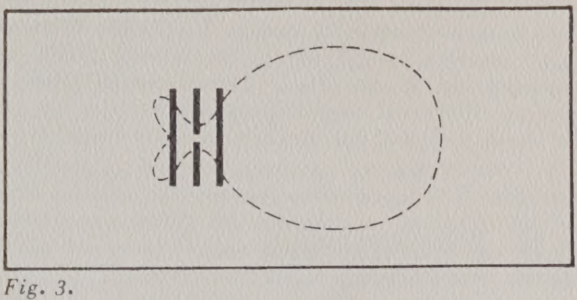


Fig. 3.

true for *any* beam at the frequency of maximum front-to-back ratio. However, the same beam at other frequencies may show characteristics of *maximum forward gain.* This, of course, will result in slight variation of the overall pattern—*but pattern symmetry is still maintained!*

In other words, a beam can be tuned for maximum forward gain at its resonant frequency and still show maximum front-to-back at another frequency within the band or bands. This is a fact not generally known to the Ham Fraternity.

MOSLEY *TRAP MASTER* beams do not require baluns or other balancing devices to provide a balanced radiation pattern. At the same time, the need for hard-to-handle open-wire or other special feed-line types is eliminated. Ordinary RG-8/U coax makes a highly satisfactory feed-line.

● SWR?

"SWR–itis"! CAN IT BE CURED?

The advent of low-cost SWR bridges has enabled ever-increasing numbers of Hams to become acquainted with so-called *reflected power.* This has become such a popular conversation piece on the Ham bands that an entirely unwarranted degree of importance has attached itself to the subject of SWR.

Many Hams—who for years had experienced excellent results with their beam antennas—suddenly found that their feed-lines possessed something less than perfect *unity match* to their antennas. Such is human nature, that, regardless of past performance, this newly discovered "revolting development" became entirely intolerable!

This unjustified *mental attitude* has for some years provided nice incomes for chiropractors and broken bone specialists who have reaped far more profit from the roof and tower excursions than have the Hams who restlessly seek perfection.

Competent professional antenna engineers generally agree that in most applications a standing wave ratio of up to *5 to 1, or somewhat higher,* is satisfactory and acceptable.

For example; referring to the *ARRL Antenna Handbook,* we see that a SWR of 5 to 1 in RG-8/U coax will result in a signal loss at 28 mcs. of only 1 db. *This decrease in signal strength cannot normally be detected on an S-Meter!*

This is the "introduced loss", due to SWR, and has no bearing on the normal 1 db. line loss inherent in 100 feet of the line which is present in any case. Furthermore, these losses decrease as frequency decreases!

Sometimes — and particularly with Ham antennas which must operate over wide ranges of frequencies — it is not at all desirable to have a feed-line/antenna combination that offers perfect unity SWR. Such combinations usually are very critical and while providing unity at *one* frequency will often have a poorer response curve than other antennas designed to give optimum performance over a greater band-width.

In actual practice, most Hams will be far better off with beams showing 1.1/1 SWR at tuned point and increasing but little as frequency is changed; rather than with antennas that show unity at resonance but must be retuned for operation at other frequencies.

MOSLEY *TRAP MASTER* beams do not claim perfect unity match at any point in the bands but are so designed to provide optimum performance over the full width of each band without tiresome roof or tower climbing.

As can be seen in *Fig. 4,* the frequency response curves show a very low SWR at the minimum tuning points and very slight and inconsequential rise in SWR to the band limits.

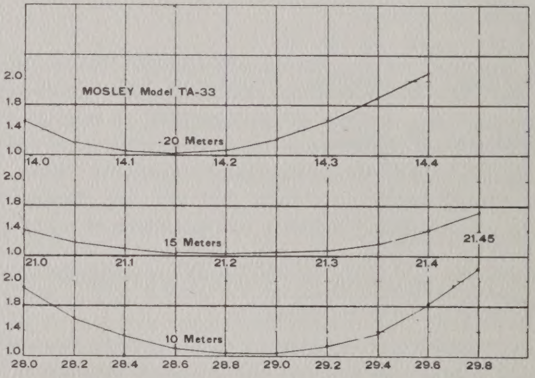


Fig. 4.

HOW THE TRAP ANTENNA WORKS

The multi-band trap antenna is not a new concept. Reference to such a design can be found in a 1940 issue of *Electronics*. However, many Hams are not completely familiar with the design principle of such antennas and so a brief description of this principle may be of interest.

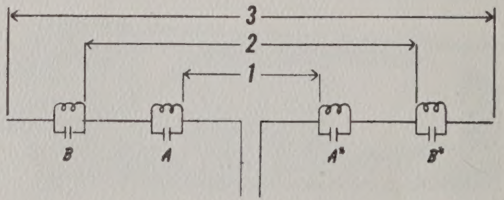


Fig. 5 diagrams the circuitry of a 3—band trap type antenna. Length of section *1* is equal to a half wave length at the highest frequency band to be used. Parallel resonant circuits *(A)* and *(A*)* are then added at the ends of this section, these circuits being resonant at the frequency for which *1* is a half wave length. Operation at the next lower band is achieved by adding element sections so that the equivalent electrical length of *2*, when the reactance introduced by the resonant circuits is taken into account, corresponds to half wave length resonance for the next lower band. These added sections are inoperative for the frequency for which *1* is in half wave resonance, since they are isolated by the high impedance of the parallel resonant circuits *(A)* and *(A*)*. The third band of operation is obtained in the same manner; ie, adding resonant circuits *(B)* and *(B*)* and element sections so that *3* is a half wave length at the lowest band.

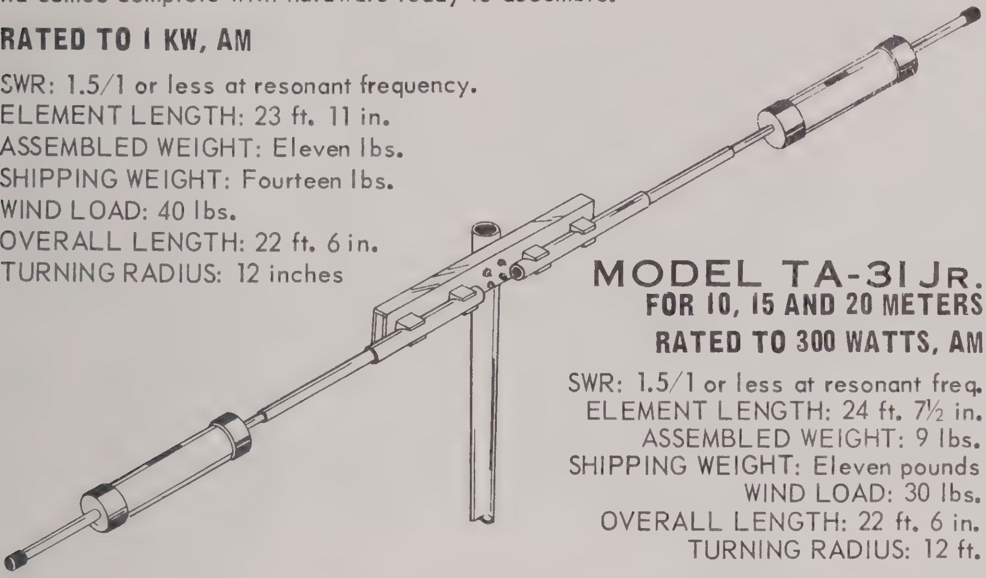
TRAP MASTER BEAM ANTENNAS

MODEL TA-31 FOR 10, 15 AND 20 METERS

This is the antenna for the ham wanting to begin with an inexpensive three band dipole and build into the famous TA-33 or TA-3340 'Trap-Master' beams. TA-31 is the radiator element for the model TA-33 beam. See conversion kits page 10. Antenna comes complete with hardware ready to assemble.

RATED TO 1 KW, AM

SWR: 1.5/1 or less at resonant frequency.
ELEMENT LENGTH: 23 ft. 11 in.
ASSEMBLED WEIGHT: Eleven lbs.
SHIPPING WEIGHT: Fourteen lbs.
WIND LOAD: 40 lbs.
OVERALL LENGTH: 22 ft. 6 in.
TURNING RADIUS: 12 inches



MODEL TA-31 JR.
FOR 10, 15 AND 20 METERS

RATED TO 300 WATTS, AM

SWR: 1.5/1 or less at resonant freq.
ELEMENT LENGTH: 24 ft. 7½ in.
ASSEMBLED WEIGHT: 9 lbs.
SHIPPING WEIGHT: Eleven pounds
WIND LOAD: 30 lbs.
OVERALL LENGTH: 22 ft. 6 in.
TURNING RADIUS: 12 ft.

TA-31 Jr., the radiator element of the TA-33 Jr., is just the beginning of the ultimate in low power beams. Antenna operates as a rotatable dipole on three bands. The "Junior" represents a small investment toward obtaining the famous three element Trap-Master Jr. beam or the New MP-33 Tig-Array beam. See conversion kits page 10. Antenna comes complete with hardware and ready to assemble.

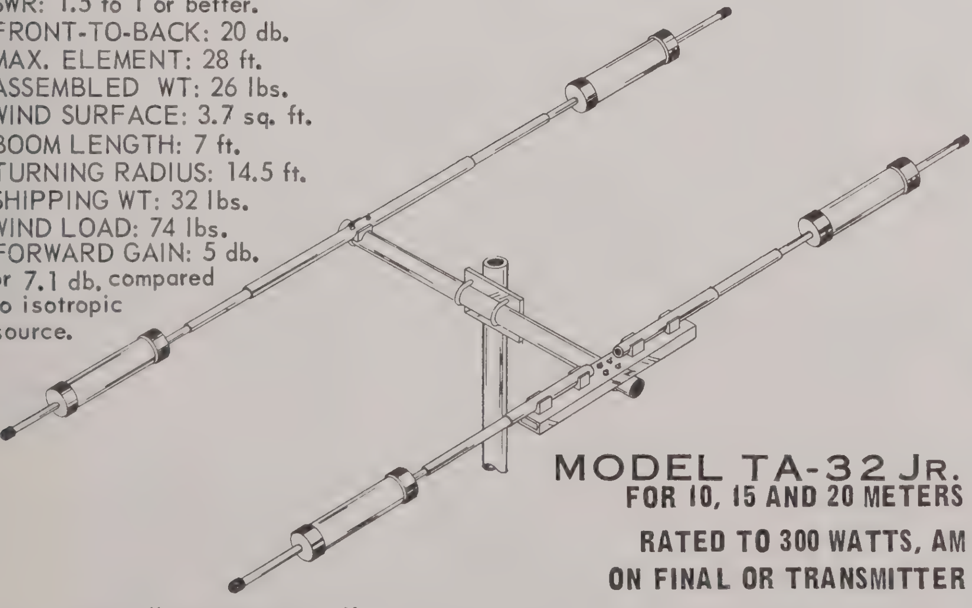
see page 7 for TA-31, TA-31 Jr., TA-32 and TA-32 Jr. SWR Curves

MODEL TA-32 FOR 10, 15 AND 20 METERS

TA-32, two element version of the World Famous Mosley TA-33 "Trap-Master" beam. The broadband design features top efficiency on each band 10, 15 and 20 meters. May be converted to TA-33 (see page 10).

RATED TO 1 KW, AM ON FINAL OF THE TRANSMITTER

SWR: 1.5 to 1 or better.
FRONT-TO-BACK: 20 db.
MAX. ELEMENT: 28 ft.
ASSEMBLED WT: 26 lbs.
WIND SURFACE: 3.7 sq. ft.
BOOM LENGTH: 7 ft.
TURNING RADIUS: 14.5 ft.
SHIPPING WT: 32 lbs.
WIND LOAD: 74 lbs.
FORWARD GAIN: 5 db. or 7.1 db. compared to isotropic source.



MODEL TA-32 JR.
FOR 10, 15 AND 20 METERS

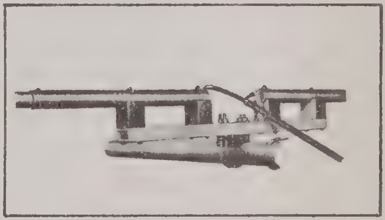
RATED TO 300 WATTS, AM ON FINAL OR TRANSMITTER

Two element "Trap-Master Jr." features 5 db. gain or 7.1 db. compared to isotropic source, and 20 db. front-to-back. Weighs just 14 lbs. TA-32 Jr. has turning radius of 13 ft. 9 in. The boom length is 6 ft. Maximum element length is 26 ft. 8 in. Wind load is just 62 lbs. Shipping weight, only 22 lbs. Will convert to TA-33 Jr. (see p.10)

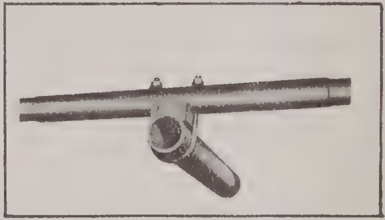
Mosley Electronics Inc.
ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO

Famous Mosley All-metal encased traps were developed for use in World-Famous Trapmaster beams such as the TA-33.

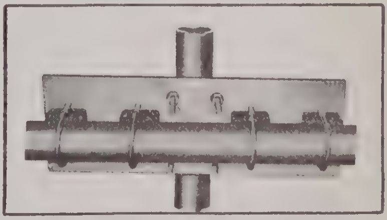
The Junior traps are made of identical materials as the TA-31 but are smaller in size for reduced power requirements.



Beam is fed by connecting the line directly to the open center of the radiator.



MOSLEY quality antennas incorporate stainless steel hardware known to survive the rigors of climate, long use.



Mosley U bolts hold antenna mast securely.

AMATEUR RADIO ANTENNAS MOSLEY
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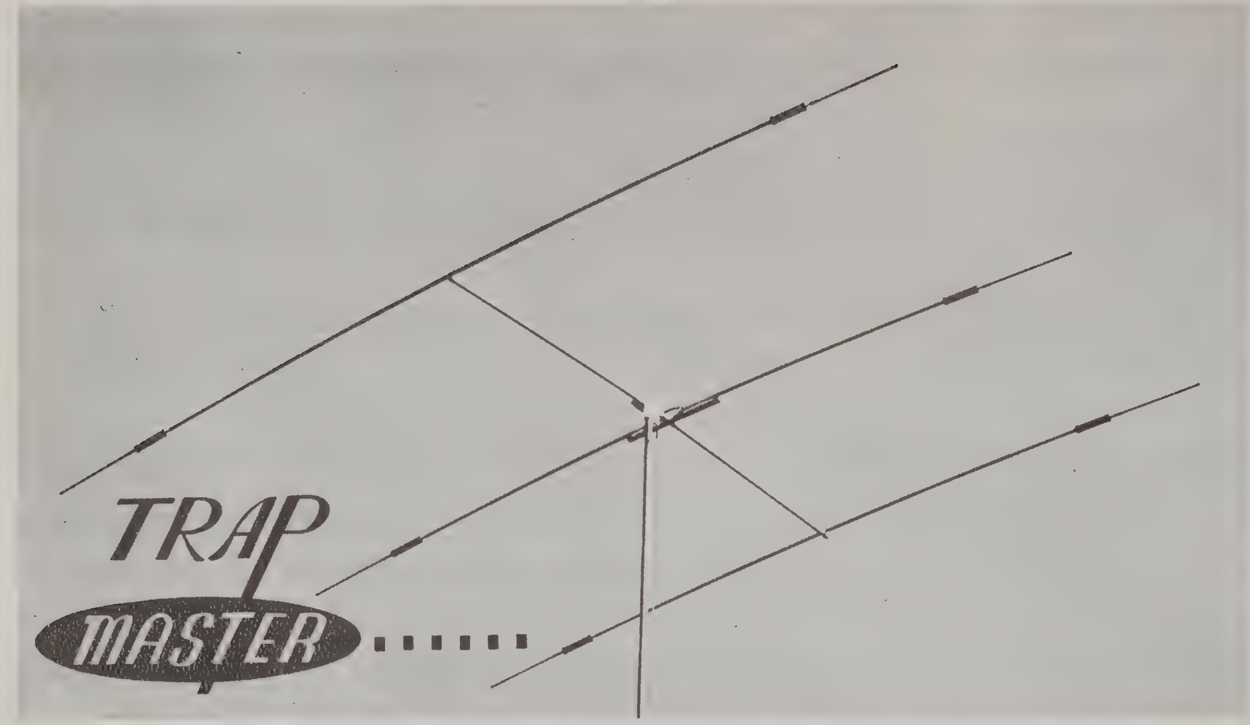
BEAM ANTENNAS



TA-33 & TA-33 Jr.

The Mosley TA-33, three element beam, provides outstanding 10, 15 and 20 meter performance. Exceptionally broadband – gives excellent results over full Ham bandwidth. Exclusive Mosley trap design offers resonant frequency stability under all weather conditions. Element center sections are of double thickness aluminum to reduce sag. Boom requires no bracing. Heavy duty universal mounting plate fits masts up to 1½ inch O.D. Antenna handles full KW, amplitude modulated. Feed with one coax line, RG-8/U recommended. The TA-33 may be used on 40 Meters (see Conversion Kits – Page 10).

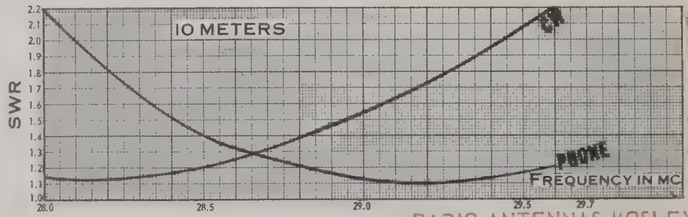
Mosley TA-33 Jr. incorporates the famous "Trap-Master" quality and performance found in TA-33 but at a reduced price. Now even low power "rigs" will have real "authority" even on the crowded bands of today. Rated to 300 watts, AM and CW, – 1000 watts P.E.P. on SSB. The Junior may be converted to MP-33 with higher power rating (See Page 10).

SPECIFICATIONS AND PERFOFMANCE DATA

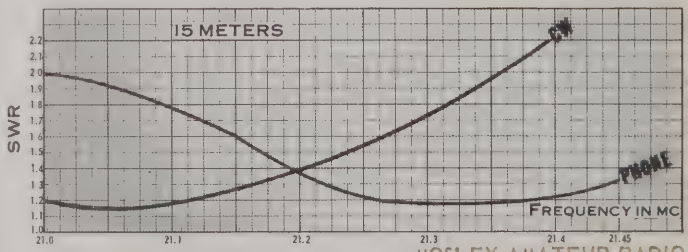
	MODEL TA-33	MODEL TA-33 JR.
* Forward Gain	Up to 8 db.	Up to 8 db.
Front-to-Back	20 db. or better	20 db. or better
Standing Wave Ratio	1.5 to 1 or less.	1.5 to 1 or less.
Max. Element Length	28 feet.	26 feet 8 inches
Boom Length	14 feet.	12 feet.
Turning Radius	15.5 feet.	14 feet 9 inches.
Wind Load	114 pounds.	86 pounds.
Wind Surface	5.7 Square feet	4.3 Square feet
Assembled Weight	40 pounds.	20 pounds.
Shipping Weight	53 pounds.	28 pounds.

***Forward Gain: 8 db. or 10.1 db. compared to isotropic source.**

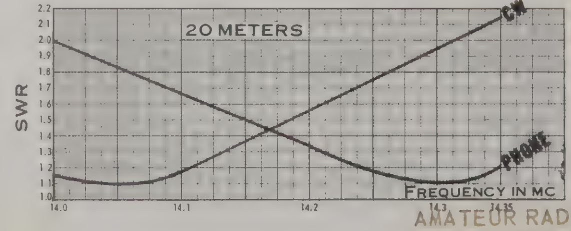
10 METERS



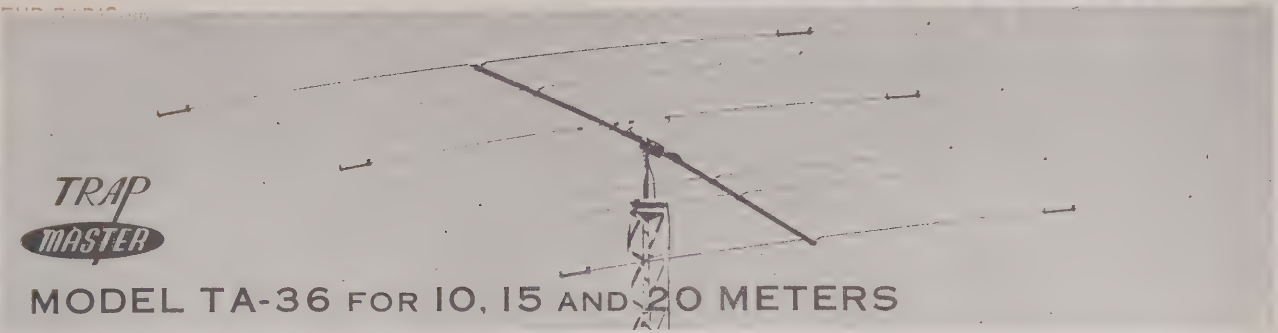
15 METERS



20 METERS



MOSLEY AMATEUR RADIO ANTENNAS



MODEL TA-36 FOR 10, 15 AND 20 METERS

This wide-spaced, six element configuration employs 4 operating elements on 10 meters, 3 operating elements on 15 meters, and 3 operating elements on 20 meters. Automatic bandswitching is accomplished through Mosley exclusively designed high impedance parallel resonant "Trap Circuits". The TA-36 is designed for 1000 watts AM/CW or 2000 watts P.E.P. SSB. Traps are weather and dirt proof offering frequency stability under all weather conditions. Just one coaxial feed line is needed. 52 ohm RG-8/U is recommended. Antenna comes complete with illustrated booklet and color coded elements for ease of assembly.

The TA-36 is constructed of heavy-wall aluminum. Fully rust and corrosion proof. May be converted to 40 meters without affecting electrical characteristics of the three-band beam (see p.10)

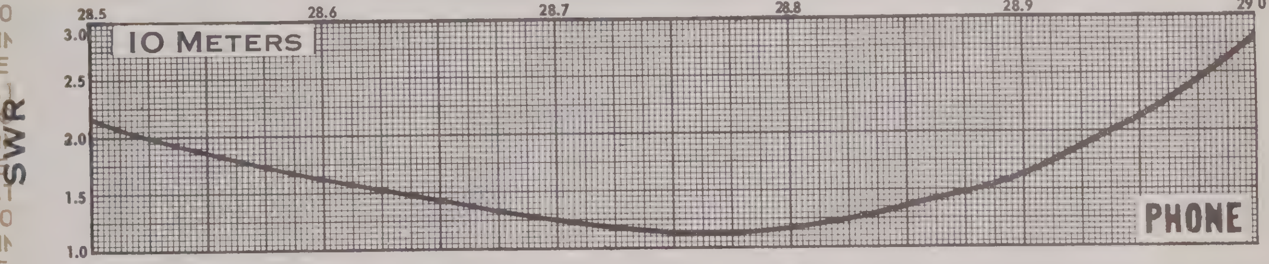
SPECIFICATIONS AND PERFORMANCE DATA:

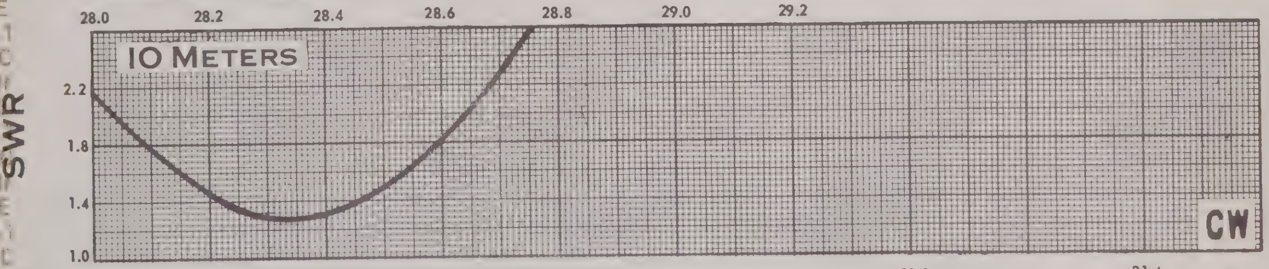
FORWARD GAIN: On 10 meters is 9 db. or 11.1 db. compared to isotropic source., on 15 meters is 8.5 db. or 10.6 db. compared to isotropic source., on 20 meters is 8 db. or 10.1 db. compared to isotropic source.

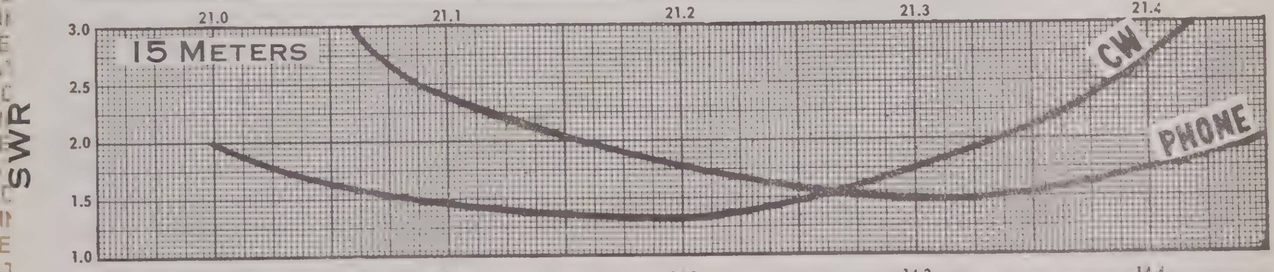
FRONT-TO-BACK: 20 db. or better on all three bands.
STANDING WAVE RATIO: 1.5/1 or better
MAXIMUM ELEMENT LENGTH: 29 feet
BOOM LENGTH: 24 feet

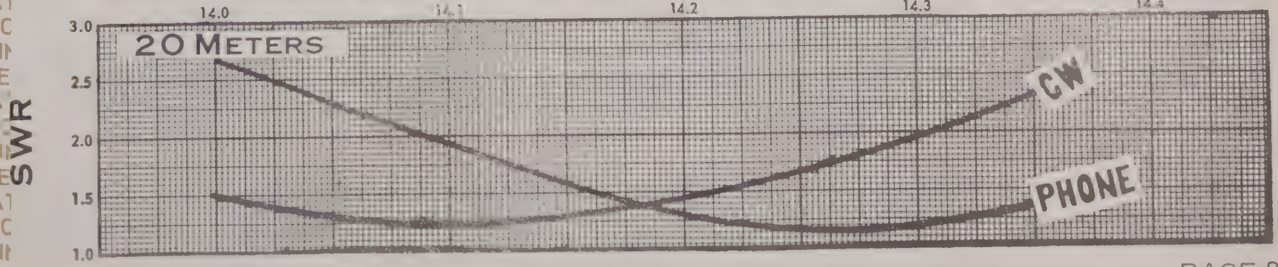
TURNING RADIUS: 19 feet 3 inches
WIND LOAD: (EIA standards 80 MPH) 210.1 lbs.
WIND SURFACE AREA: 10.7 square feet
ASSEMBLED WEIGHT: 69 lbs.

FREQUENCY IN MC.

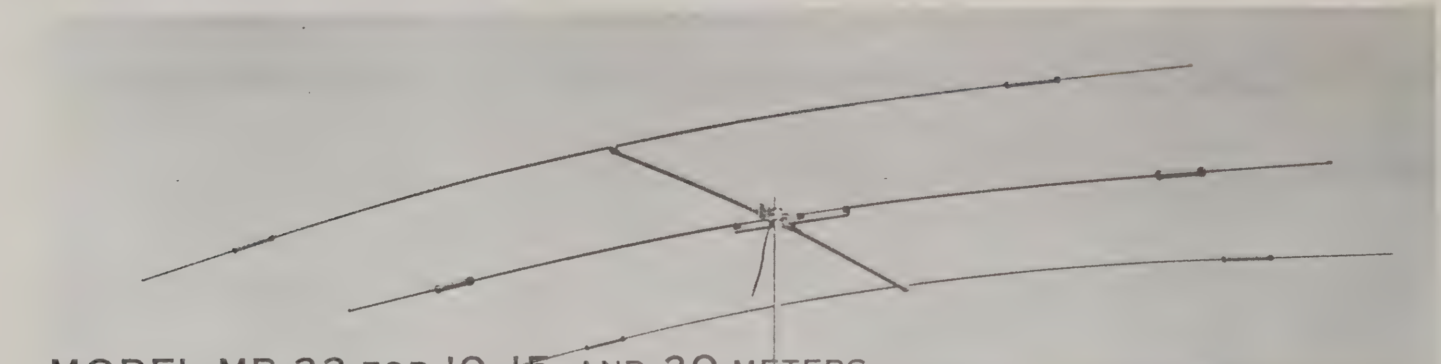








BEAM ANTENNAS



MODEL MP-33 FOR 10, 15, AND 20 METERS

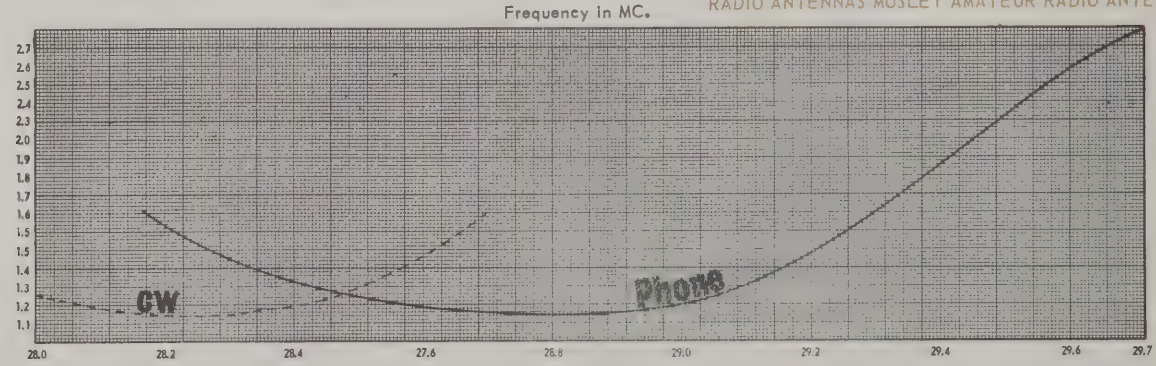
Tig-Array TRAP MASTER BEAM

The newest addition to the Trap-Master family is the Mosley MP-33 Tig-Array incorporating the famous Mosley metal encased Trap-Master Junior and Senior traps. Element center sections are made of double thickness aluminum to reduce sag. Boom requires no bracing. Feed with RG8/U, 52 ohm coax. Handles optimum SSB power and medium AM power. This beam for 10, 15, and 20 meters is power rated for 750 watts AM/CW and 2000 watts P.E.P. on SSB. Priced at a fraction of expected cost. Use on 40 meters without affecting electrical characteristics of beam with TA-40KR Kit (see page 10)

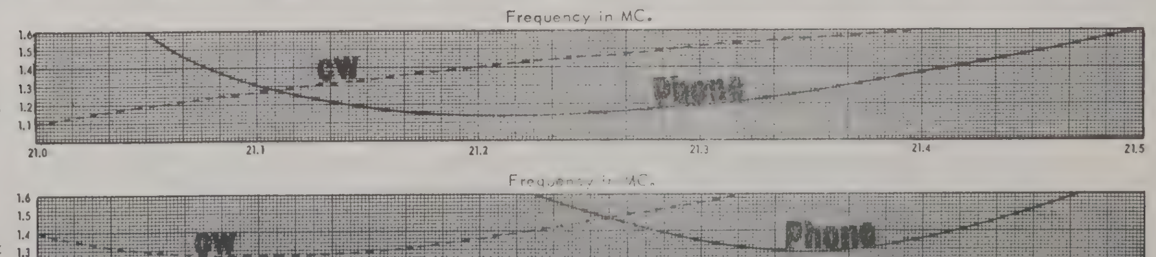
SPECIFICATIONS AND PERFORMANCE DATA

FORWARD GAIN: up to 8 db. or 10.1 db. compared to isotropic source.
FRONT-TO-BACK: – 20 db. or better
STANDING WAVE RATIO: – 1.5/1 or better
MAXIMUM ELEMENT LENGTH: – 27 feet
BOOM LENGTH: – 12 feet
TURNING RADIUS: – 15 feet
WIND LOAD: – (EIA std. 80 MPH) 96 lbs.
ASSEMBLED WEIGHT: – 22 lbs.
SHIPPING WEIGHT: 28 lbs.

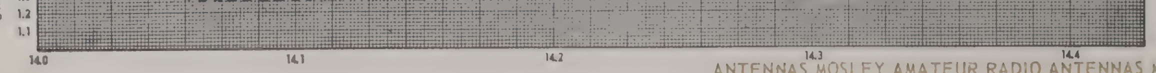
10 METERS ➤



15 METERS ➤



20 METERS ➤

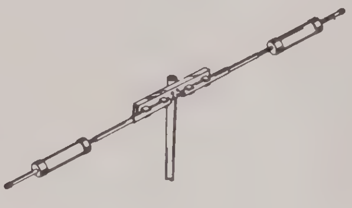


TRAP MASTER CONVERSION KITS

Build Your Ultimate TRAP-MASTER Beam

STEP 1. —————— **TA-31** or **TA-31 JR.**

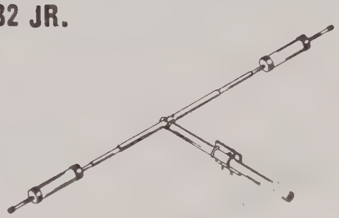
Mosley Conversion Kits are perfect for the ham with little money who plans to eventually build the ultimate antenna. Start from a simple one-element Mosley Trap-Master 10, 15, and 20 meter dipole. The easy-to-follow Mosley Kits allow you continuous operation while building the ultimate antenna. For Specifications and Performance Data See Page No. 6.



STEP 2. —————— **TA-32** or **TA-32 JR.**

CONVERSION KIT TA-31 – 32
CONVERSION KIT TA-31 – 32 Jr.

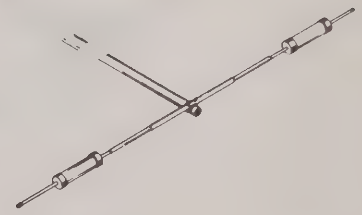
The one-element antenna (above) can easily be converted to a two-element antenna by adding a reflector element, a boom, boom-to-mast plate and necessary hardware. For Specifications and Performance Data see Page No. 6.



STEP 3. —————— **TA-33** or **TA-33 JR.**

CONVERSION KIT TA-32 – 33
CONVERSION KIT TA-32 – 33 Jr.

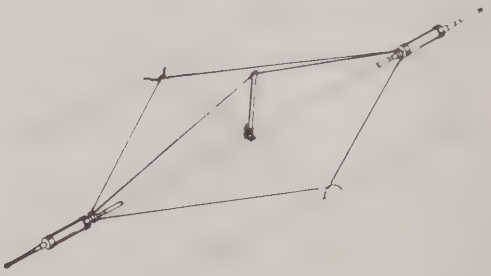
The popular two-element Trap-Master 10, 15, and 20 meter beam is easily converted to a more powerful three element beam. To make a three-element antenna add a director element, boom, boom splice and necessary hardware. For Specifications and Performance Data see Page No. 7.



STEP 4. —————— **TA-3340**

40 Meter CONVERSION KIT . . . TA-40KR

Owners of the TA-31, TA-32, TA-33 and TA-36 models may have 40 meter conversion. Simply add the 40 meter conversion kit to the radiator on the beam. All Jr. antennas must be converted to a MP - 33 (see below) before adding a 40 meter conversion kit. Specifications and Performance Data on the TA-36 may be found on Page No. 8.



MP-33 —————— **MP-33 TIG-ARRAY**

TA-33 Jr. CONVERSION KIT . . . MPK – 3

The owners of a TA-33 Jr. may have higher power without buying an entirely new antenna. The addition of the MPK-3 Kit converts the TA-33 Jr. into essentially a new MP-33 Tig-Array (750 watts AM/CW; 2000 watts P.E.P. SSB). For further Specifications and Performance Data on the MP-33 see Page No. 9.

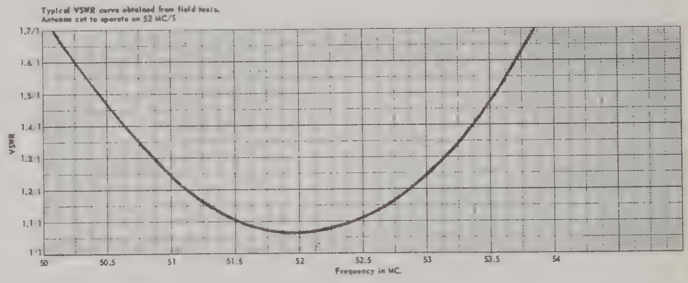
SCOTCH-MASTER
6 & 2 Meters

SCOTCH-MASTER Models A-56-S and A-76-S 6 Meter Beams

These VHF antennas feature excellent forward gain and directivity. "Gamma" matched. Designed to handle maximum legal power (1 KW AM or 2 KW P.E.P. SSB). Mounting U bolt fits up to 1½ inch OD mast. Antennas may be matched to 52 or 72 ohm unbalanced lines. Beams are available in kit form ready to assemble.

SPECIFICATIONS AND PERFORMANCE DATA

	MODEL A-56-S	MODEL A-76-S
*Forward Gain	Up to 10 db.	Up to 12 db.
Front-to-Back	20 db. or better.	20 db. or better.
Standing Wave Ratio	1.5/1 or better.	1.5/1 or better.
Max. Element Length	9 feet 10 inches	9 feet 10 inches.
Boom Length	12 feet.	22 feet.
Turning Radius	7 feet 9 inches.	13 feet.
Max. Wind Load	32 pounds.	51 pounds.
Wind Surface	1.25 square feet.	2.5 square feet.
Assembled Weight	7½ pounds.	12½ pounds.
Shipping Weight	9 pounds.	13 pounds.
Number of Elements	Five.	Seven.



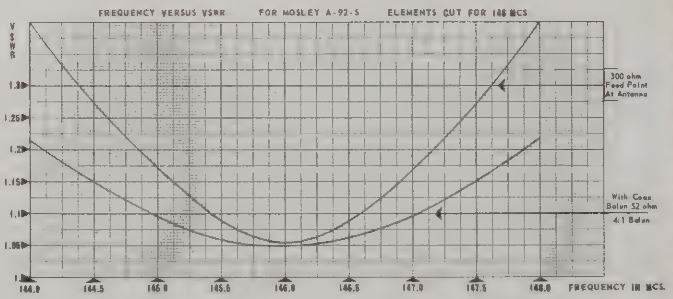
*A-56-S Forward Gain 10 db. over reference dipole or 12.1 db. compared to isotropic source. *A-76-S Forward Gain 12 db. over reference dipole or 14.1 db. compared to isotropic source.

SCOTCH-MASTER Model A-92-S 2 Meter Beam

Work 2 meter DX! This beam for 2 meters consists of 9 elements on one boom driven by a folded dipole to provide excellent matching, directivity and forward gain. Handles 1 KW AM, 2 KW P.E.P. input to final SSB. In kit form and easy to assemble. U-bolt fits masts up to 1½ O.D.

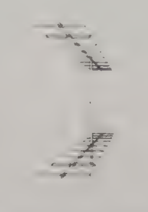
SPECIFICATIONS AND PERFORMANCE DATA

	MODEL A-92-S
Forward Gain	14 db. over reference dipole or 16.1 db. compared to isotropic source.
Front-to-Back	20 db.
Standing Wave Ratio	1.5/1 or better.
Max. Element Length	3 feet 5 inches.
Boom Length	12 feet.
Turning Radius	6.5 inches.
Max. Wind Load	25 pounds.
Wind Surface	1.25 square feet.
Shipping Weight	8 pounds.

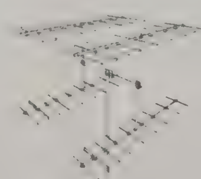


SCOTCH-MASTER STACKING KITS. For A-92-S 2 Meter Beam

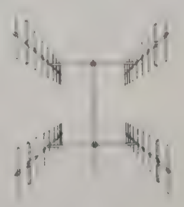
Stack two A-92-S beams horizontally, one above the other, with A-92-S-SK1 Kit. Results in 3 db. additional gain over a single horizontally mounted beam. Stack Four A-92-S beams vertically two over two with A-92-S-SK2V Kit, or horizontally two over two with A-92-S-SK2H Kit. Attain 6 db. additional gain over singly mounted beam. Kits contain mounting plates, insulators, phasing line, hardware, support members and complete instructions.



Model A-92-S **SK1**



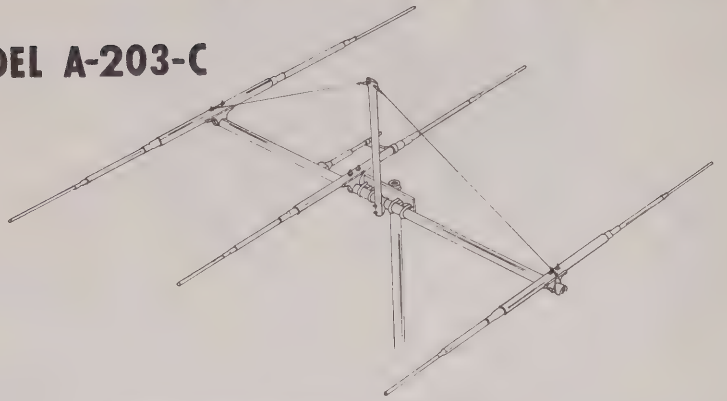
Model A-92-S **SK2H**



Model A-92-S **SK2V**

BEAM ANTENNAS

MODEL A-203-C

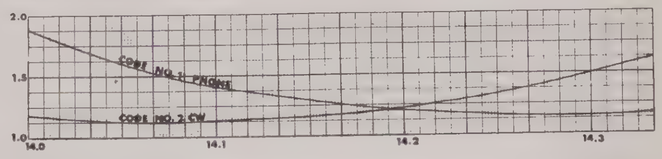


An ideal beam for punching through the QRM on 20 meters . . . the A-203-C. This wide-spaced three element 20 meter beam, designed for FULL POWER, will out-perform many four to six element arrays. "Gamma" matched for impedance. Exclusive anti-flutter beam design results in a virtual elimination of element flutter and boom vibration.

SPECIFICATIONS AND PERFORMANCE DATA

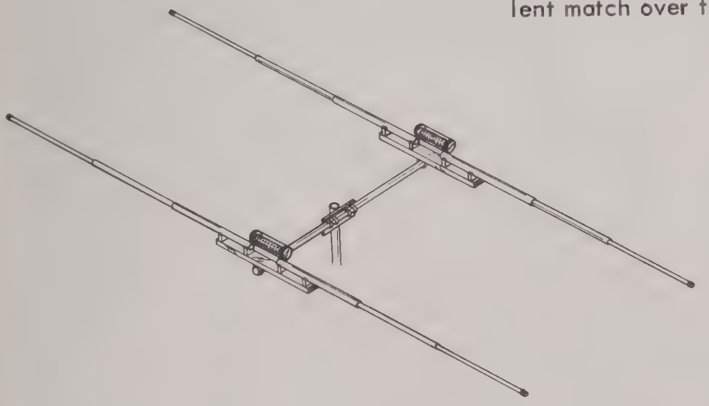
FORWARD GAIN – 8 db. over reference dipole or 10.1 compared to isotropic source.
FRONT-TO-BACK – 24 db.
STANDING WAVE RATIO – 1.5/1 or better
MAXIMUM ELEMENT LENGTH – 37 feet
BOOM LENGTH – 24 feet
TURNING RADIUS – 22 feet
WIND LOAD – (80 mph EIA Std.) – 140 lbs.
WIND SURFACE AREA – 7 sq. feet
ASSEMBLED WT. – 40 lbs.
SHIPPING WT. 49½ lbs.

SWR Curves for A-203-C 52 OHMS



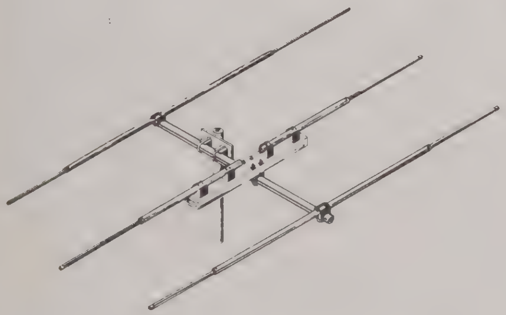
Model S-402

For a top signal needed to push through forty meter QRM, the Mosley Signal Master S-402 will do the trick! This 100% rust-proof 2 element beauty constructed of rugged heavy-wall aluminum is designed and engineered to provide the performance you need for both DX hunting and relaxing in a QRM free rag-chewing session. Beam is fed through link coupling, resulting in an excellent match over the entire bandwidth.



FORWARD GAIN: 5 db. over reference dipole or 7.1 db. compared to isotropic source.
FRONT-TO-BACK: 20 db.
SWR: 1.5/1 or better
MAXIMUM ELEMENT LENGTH: 44' 3"
BOOM: 2" OD X .110" wall X 20'
TURNING RADIUS: 24' 4"
WIND LOAD (EIA Std. 80 MPH) 200 lbs.
ASSEMBLED WEIGHT: 58 lbs.
SHIPPING WEIGHT: Approx. 40 lbs.
RATED: 1 KW AM/CW or 2 KW P.E.P. SSB input to the final.

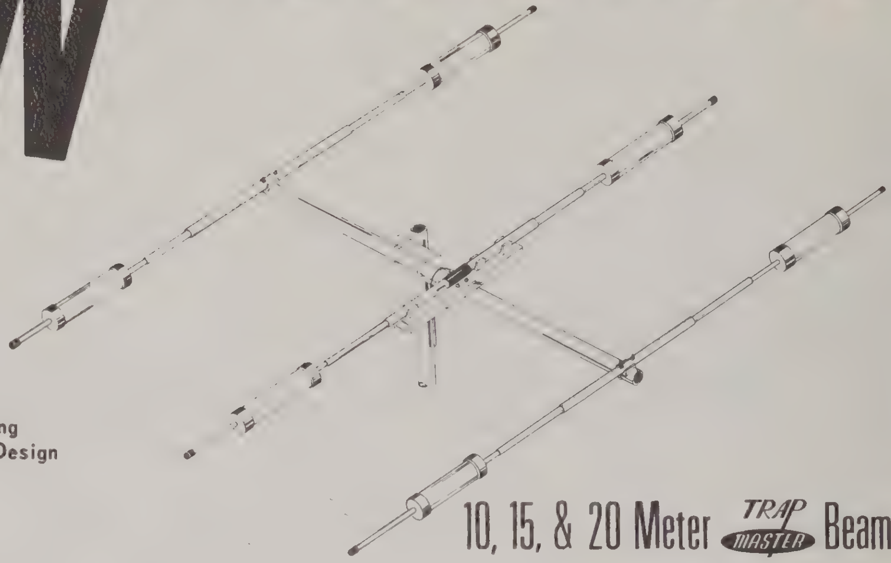
MODEL A-310 and A-315



"Power-Master" Beams are full-sized arrays designed exclusively for single band operation. The A-310 is a 3-element beam for 10 meters; the A-315 is a 3-element version designed for 15 meters. Both are rated for 1 KW AM/CW and 2 KW SSB P.E.P. input to the final. Antennas are 100% rust proof. Incorporate stainless steel hardware, high impact polystyrene insulators, aluminum boom and elements. Other features of these antennas include . . . Low SWR over entire bandwidth, maximum gain on all bands fed with 52 ohm coax, utilize famous Mosley Match.

SPECS AND PERFORMANCE DATA	MODEL A-310	MODEL A-315
FORWARD GAIN	8 db. over reference dipole or 10.1 db. compared to isotropic source.	8 db. over reference dipole or 10.1 db. compared to isotropic source.
FRONT-TO-BACK	25 db.	25 db.
SWR	1.5/1 or better	1.5/1 or better
MAXIMUM ELEMENT LENGTH	18 ft. 7 in.	23 ft. 4 in.
BOOM	12 ft. X 1 ¼ in. O.D.	12 ft. X 1 ¼ in. O.D.
TURNING RADIUS	11 ft. 1 in.	13 ft. 2 in.
WIND LOAD	(EIA STD. 80 MPH): 69 lbs.	(EIA STD. 80 MPH) – 87 lbs.
WIND SURFACE	3 square feet.	4 square feet.
ASSEMBLED WEIGHT	25 lbs.	26 lbs.
SHIPPING WEIGHT	33 lbs.	34 lbs.

NEW The Classic 33



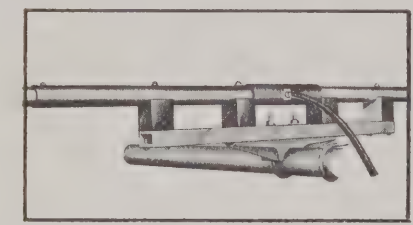
10, 15, & 20 Meter TRAP MASTER Beam

FEATURES:

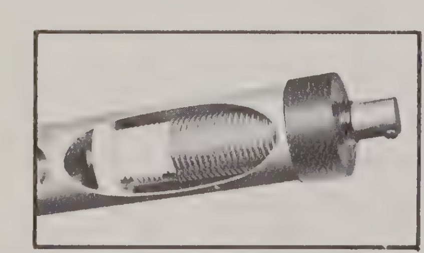
- Longer Boom of Greater Diameter
- Revolutionary Matching System
- Balanced Radiation
- Wider Element Spacing
- Additional Gain
- Improved Boom to Element Clamping
- World Famous Mosley "Classic" Design
- Full Power Rating

Another addition to the Trap-Master line, The Classic 33, rated for 10, 15, and 20 meters. Features a New Matching system, 'Broad Band Capacitive Matching' for additional DX gain. Incorporates exclusive Mosley 'weather-proved' traps with resonant frequency stability. This extra sturdy beam features improved boom to element clamping, balanced radiation and a longer boom for even wider element spacing. s/s hardware. Fits up to 2" mast. Use with most heavy duty rotors.

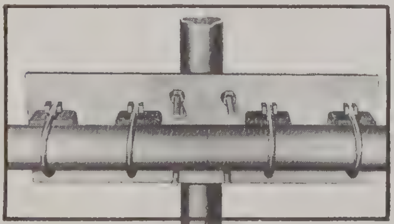
FORWARD GAIN: Full 8 db. gain on all 3 bands over reference dipole or 10.1 db. compared to isotropic source.
FRONT-TO-BACK: 20 db. or better on 15 and 20; 15 db. on 10 meters.
STANDING WAVE RATIO: 1.5/1 or better.
MAXIMUM ELEMENT LENGTH: 29 ft.
BOOM LENGTH: 18 ft.
TURNING RADIUS: 16 ft.
WIND LOAD (80 MPH EIA Std) 120 lbs.
WIND SURFACE: 6 sq. ft.
ASSEMBLED WEIGHT: 60 lbs.
SHIPPING WEIGHT: 70 lbs.
MATCHING: 52 ohm with RG8/U
POWER RATED: 1 KW AM/2 KW P.E.P. SSB input to the final



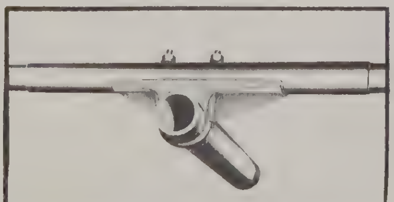
Mosley introduces a revolutionary new beam matching system "broad band capacitive matching". . . balanced element is Coax fed.



Famous Mosley All-metal encased traps were developed for use in World-Famous Trapmaster beams.

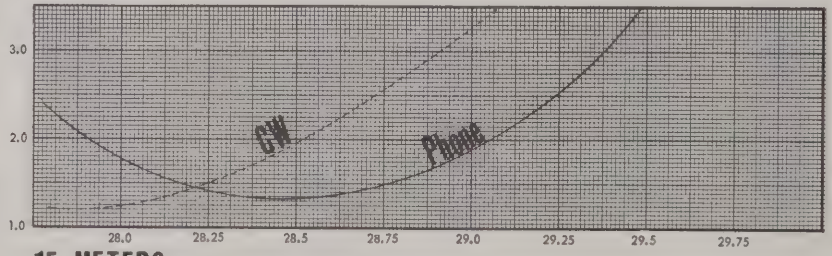


Beam features improved boom to element clamping through stronger clamping blocks and revised clamping methods.

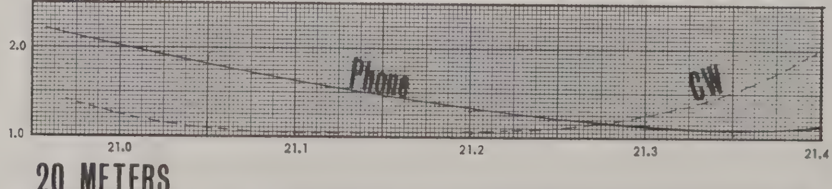


Mosley Trap-Master beams incorporate stainless steel hardware known to survive the rigors of climate, long use.

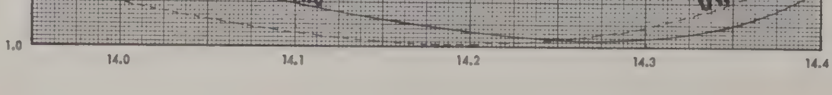
10 METERS



15 METERS



20 METERS



NEW

LANCER 1000
Amateur Mobile Antenna

for 10, 15, 20, 40 and 75/80 meters

SPECIFICATIONS AND PERFORMANCE DATA:

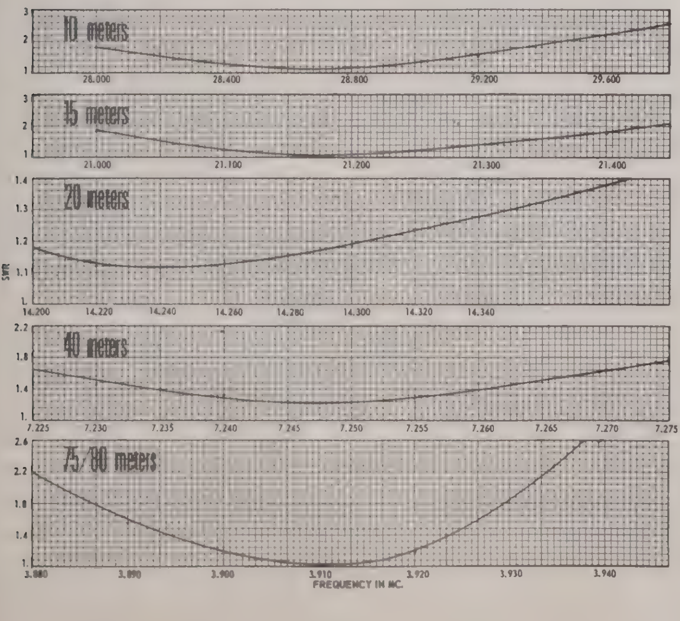
SWR—1.5/1 or better
MAXIMUM OVERALL LENGTH:—9 ft. 7 in.
MINIMUM LENGTH:—8 ft.
RADIATION PATTERN:—Omni Directional
MATCHING:—52 ohm match. Length of coax not critical.
POWER RATED:—1 KW AM, 2 KW SSB input to final.

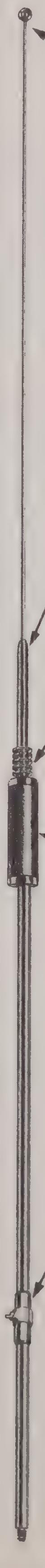
Now a mobile antenna for 5-band operation rated for full power (1 KW AM/2 KW P.E.P. SSB) - - the Lancer 1000 for 10, 15, 20, 40 and 75/80 meters. Features (1) Constructed of Top Quality corrosion-proof aluminum, chrome plated brass and stainless steel. (2) Interchangeable coils permit easy antenna operation on desired band/s. (3) Basic antenna operates on 10 meters without coil . . . just screw top and bottom whip sections together. (4) Purchase 4 coils at once or separately as desired. (5) For keeping coils in a safe, convenient place, purchase the Mosley "Coil Caddy" (coil case). (6) An offer you won't want to miss: when you purchase the antenna and all 4 coils at the same time, the "Coil Caddy" is yours.

Other features: Hinge within the lower antenna section activated by wing nut makes the antenna quick to fold over. This hinge may be used whether antenna is trunk or bumper mounted due to Mosley-innovated reversable feature of lower antenna section.

The Lancer is designed for peaking at desired frequencies with handy adjustment in upper portion of antenna activated by Allen wrench.

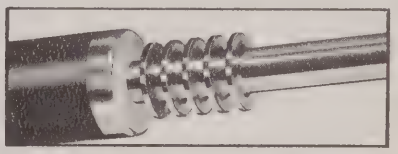
Antenna radiating section utilizes a Corona Shield incorporating a capacity coupler to effectively increase the skin area, resulting in greater efficiency.



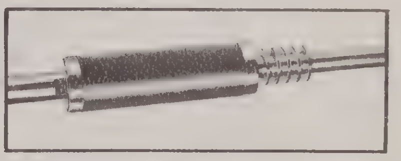


Crowning the tip of the Lancer 1000 is the Mosley innovated Corona Ring with futuristic design. This eye-appealing ring is not only attractive but functions by effectively reducing the antenna Corona effect.

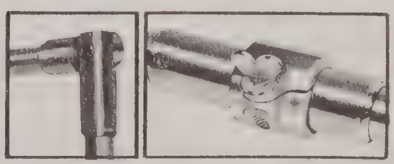
Peak antenna to desired band frequency. Insert Allen wrench in upper whip section, and adjust.



A new look with a purpose is the machined capacity coupler which, working in conjunction with the loading coil and Corona Ring, extends the skin area of the radiator for increased antenna efficiency.

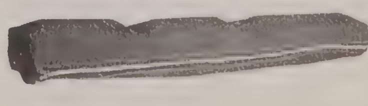


Coils are easy-to-insert and remove . . . unscrew one coil, add another in seconds. Loading coil cases are constructed of water-proof, durable, phenolic tubing.



Within the lower whip section is a hinge activated by a wing nut for quick antenna fold over. Wing nut holds whip securely and upright eliminating antenna wobble.

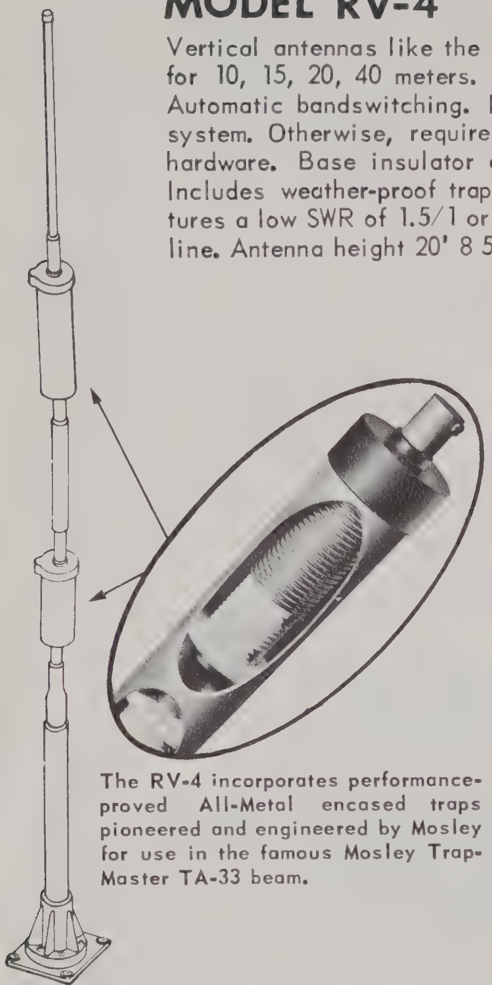
The Mosley coil "Caddy" is constructed of strong, rugged, black canvas cloth. Individual compartments keep coils weatherproof - - - away from possible damage. Case, designed for easy storage, folds and fastens with heavy duty zipper to form a compact unit.



VERTICAL ANTENNAS

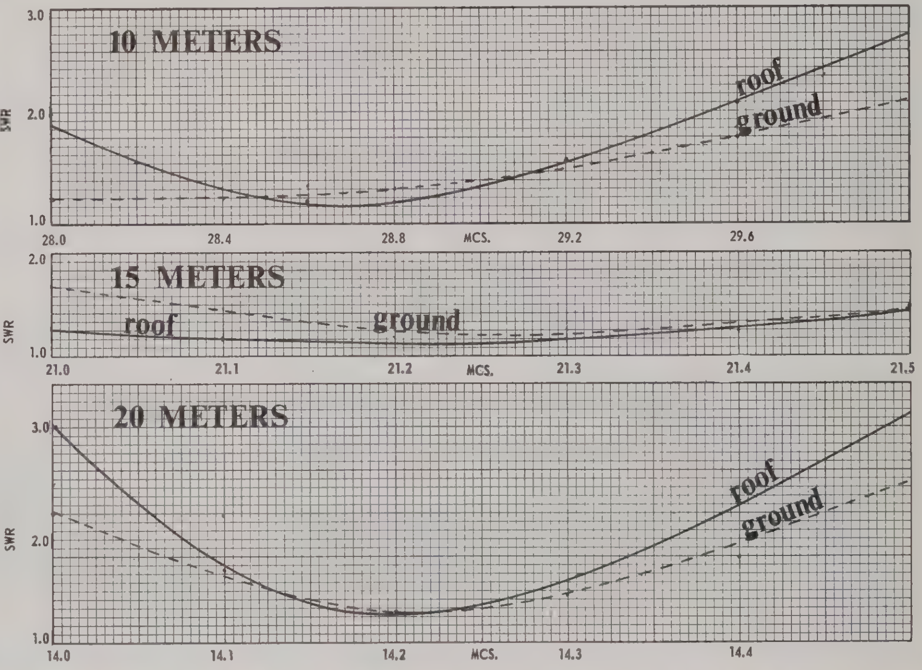
MODEL RV-4

Vertical antennas like the RV-4 are ideal for installations where space is an important factor. Designed for 10, 15, 20, 40 meters. Power rated for 750 watts AM, 1 KW CW, 2 KW P.E.P. SSB input to the final. Automatic bandswitching. If area is moist, a ground rod about 5 feet long may be used instead of radial system. Otherwise, requires four 32 foot radials. Element ends are sealed with molded caps. Rust-proof hardware. Base insulator assembly is constructed of durable cycolac plastic and heavy gauge steel. Includes weather-proof traps made famous by the Trap-Master TA-33 beam. This pre-tuned vertical features a low SWR of 1.5/1 or better and exceptionally flat response across full bandwidth. Utilizes 52 ohm line. Antenna height 20' 8 5/8" above insulator. Antenna weight 10 lbs. Entirely self supporting.



The RV-4 incorporates performance-proved All-Metal encased traps pioneered and engineered by Mosley for use in the famous Mosley Trap-Master TA-33 beam.

SWR curves for RV-4 for roof and ground mounting



Mosley Electronics, Inc. 4610 N. LINDBERGH BLVD

MODEL RV-4RK

Mosley Kit RV-4RK is available for mounting the RV-4 on roof. Kit includes radial wire, mast and hinged mounting bracket. Mounting bracket holding antenna assembly, fastens to roof with one lag screw. Roof sealer insures a secure, waterproof connection around mounting bracket. Ground with 4 radial wires (see illustration). Combined span of longest two radials - - - 43' 5¼"; combined span of shortest two radials - - 24' 1". To guy, add rope to insulator on radial ends. Height of roof mount 4' 6". Weight of mount 4½ lbs.

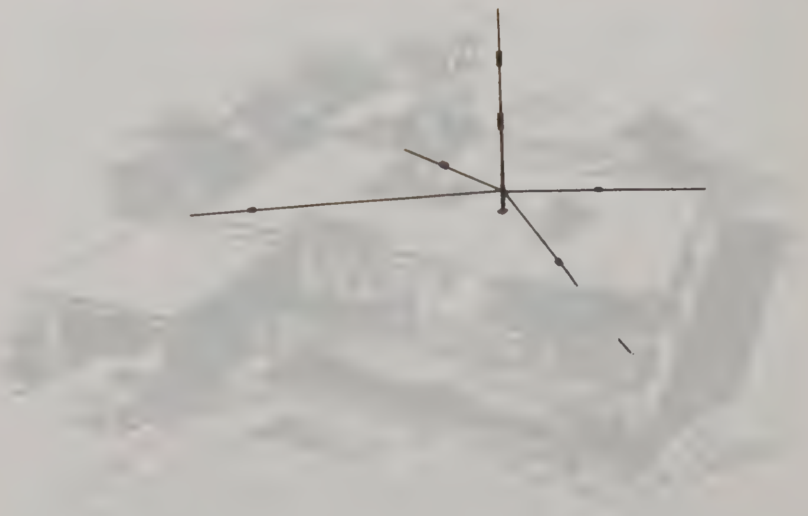


Illustration showing RV-4 mounted on roof with RV-4RK Kit.

TRAP MASTER

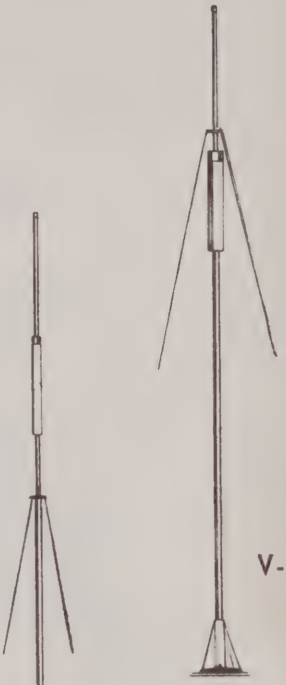
VERTICAL ANTENNAS

for 10, 15, and 20 Meters

- Automatic Bandswitching !
- Compact - Low Windload !
- Requires Short Radials !
- Weatherproof Traps !
- Low SWR !

Model V-3 Jr

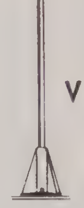
This vertical for 10, 15 and 20 meters is similar to the V-3 but rated to 300 watts AM. Features heavy-wall aluminum construction, utilizes famous Mosley weatherproof traps. No tuning or adjusting necessary. Requires only short radials. Overall height 11 feet 9 inches. Weight 2 lbs. Complete with "cycolac" base incorporating coax fitting, guy lines, hardware and instructions. Shipping weight 6 lbs.



V-3

Model V-3

Three band vertical for 10, 15 and 20 meters. Rated to a full KW. Features automatic bandswitching and low angle radiation. Maintains an electrical quarter wavelength over entire bandwidth. Aluminum trap cover, sealed with polyethylene cap, provides positive weather and dirt protection for the coils. Ground system requires only short radials. No tuning or adjusting necessary. Heavy-wall aluminum construction. 11 feet 6 inches from base to tip and weight just 4 pounds. Complete with "Cycolac" base, coax fitting, guy line and all necessary hardware and instructions. Shipping weight 8 lbs.

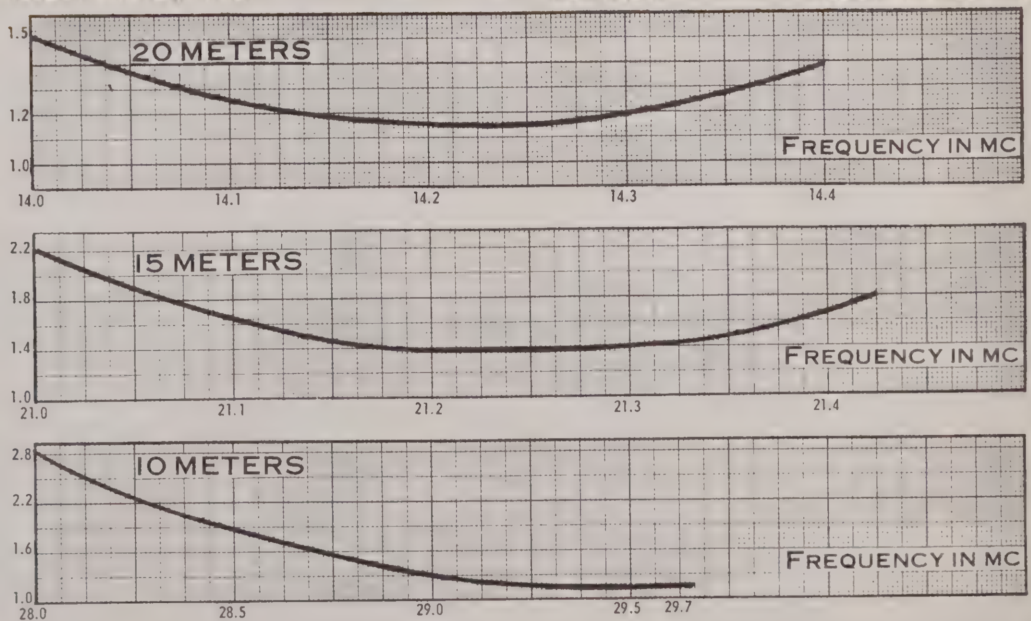


V-3 Jr.

AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY
RIDGETON MO. 63042
ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO ANTENNAS MOSLEY AMATEUR RADIO

SWR Frequency Curves

The SWR/Frequency Curves reproduced here were drawn from data compiled during actual field tests of production model antennas.



VERTICAL ANTENNAS

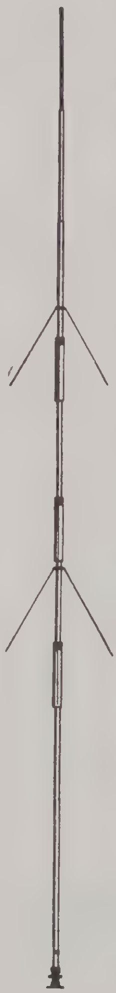
TRAP MASTER ...2 and 5 BAND VERTICALS

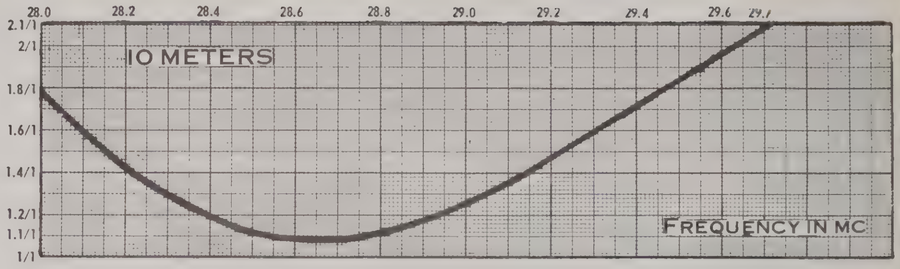
RADIO ANTENNA
ANTENNAS MOSL
MOSLEY AMATEU
AMATEUR RADIO
RADIO ANTENNA
ANTENNAS MOSL
MOSLEY AMATEU
AMATEUR RADIO
RADIO ANTENNA
ANTENNAS MOSL

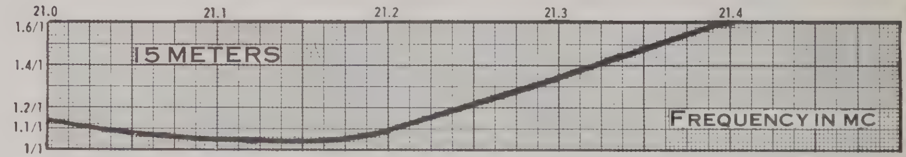
- RATED TO 1 KW
- AUTOMATIC BANDSWITCHING
- COMPACT-LOW WINDLOAD
- REQUIRES SHORT RADIALS
- WEATHERPROOF TRAPS
- LOW SWR

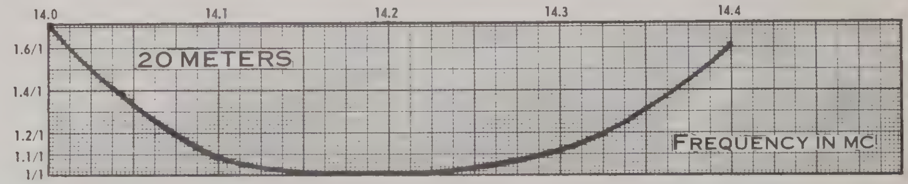
MODEL V-5

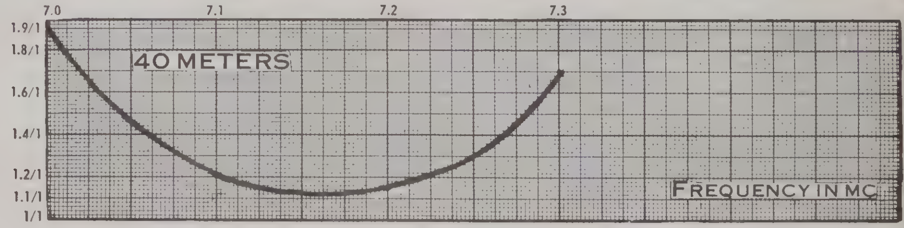
Work 10, 15, 20, 40, & 80 with one antenna. Use only one RG-8/U feed line! Antenna is rust-proof and performs brilliantly on each of the 5 bands. Handles 1 KW AM/CW and 2000 watts P.E.P. SSB. Weatherproof trap assemblies. No external loading coil needed. Length, 43 feet, 8 inches. Comes complete with polyethylene guy rope, heavy duty base with internal coax fitting and all necessary hardware. For best results, radials (not supplied) should consist of 12 wires each 64 feet in length.

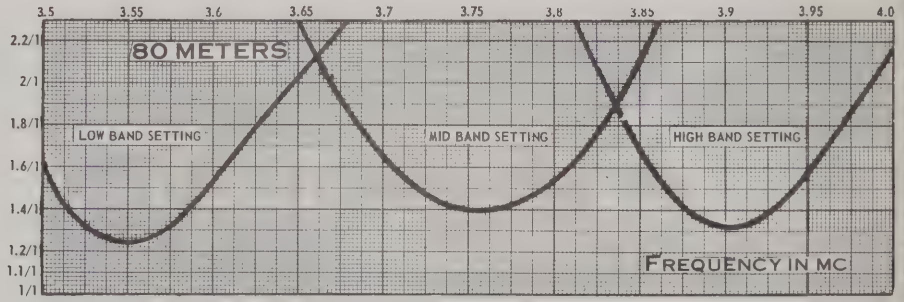


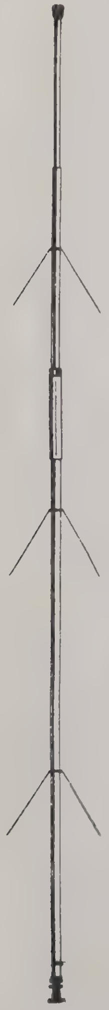


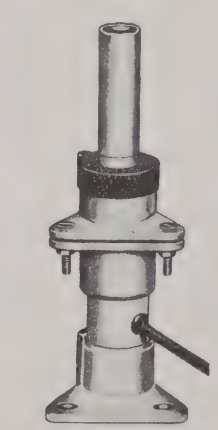










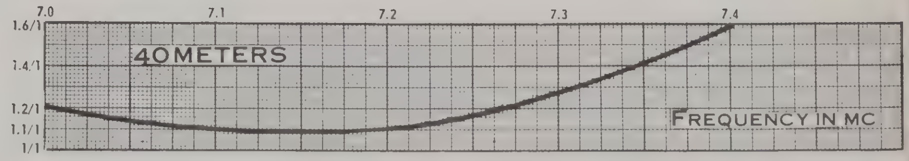


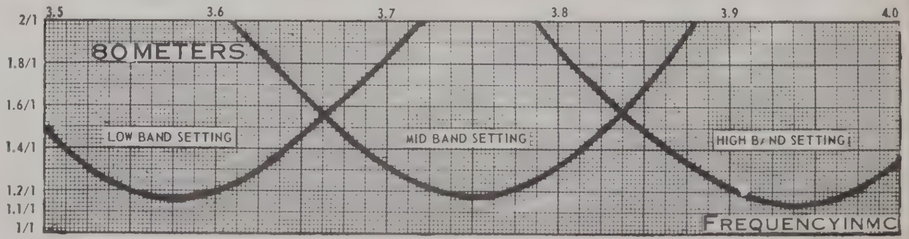
Heavy Duty Base Mount

SUPPLIED WITH V-5 and V-4-8

MODEL V-4-8

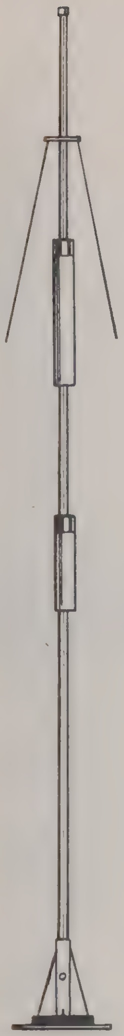
For 40 and 80 meter bands. Heavy duty rust-proof construction. Husky oversize trap assembly handles 1 KW AM/CW and 2000 watts P.E.P. SSB. Overall length of antenna is 52 feet, 3 inches. Antenna requires 12 radials, each 64 feet long for best performance. Comes complete with base mount (described above), Polyethylene guy rope, hardware and instructions.





AMATEUR RADIO
RADIO ANTENNA

VERTICAL ANTENNAS



MODEL V-4-6 FOR 10, 15, 20 AND 40 METERS

No bandswitching necessary with this Vertical. An electrical quarter wavelength on each band with low angle radiation makes this an excellent low cost DX antenna. Exclusive design provides low SWR with response exceptionally flat across full width of each band. Weatherproof traps are of Hi-Q design wound on grooved high impact forms. Will maintain resonant points under wide variations of temperature and humidity. Rated 750 watts AM/CW and 2000 watts P.E.P. SSB. Rugged, lightweight aluminum tubing telescopes to height of 20'. Pre-tuned, pre-drilled and color coded for fast, easy assembly. Supplied with heavy duty base mount that is made of molded "Cycolac" and incorporates a coax fitting and ground strap. Polyethylene guy rope, hardware and detailed instructions are also furnished. Normal ground installations require 4 radials, 33' each. Shipping weight, 12 pounds.

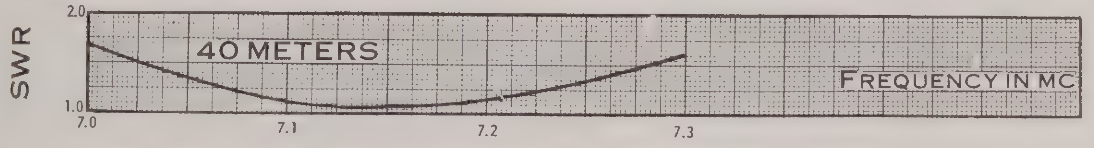
MODEL D-4BC-A

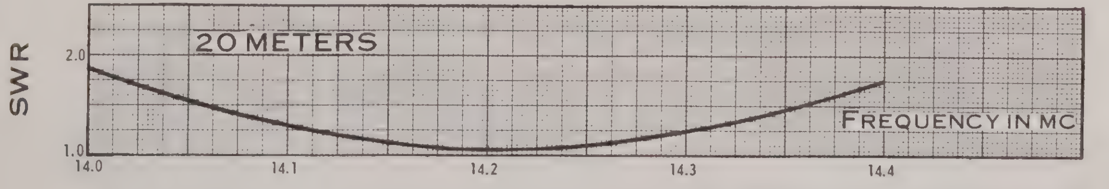
BASE LOADING COIL for 75/80 meters.

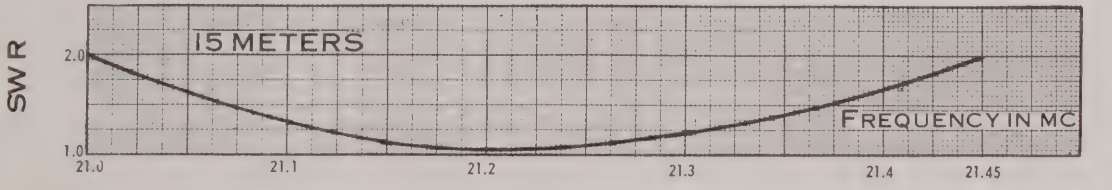
Beautifully constructed base loading coil permits operation of V-4-6 Vertical Antenna on 75 and 80 meter bands. Rated to handle 750 watts AM/WC or 2000 watts P.E.P. SSB. – – – Mounts quickly and easily on base section of vertical. Complete with nickel plated coax connector. Shipping weight, 3 pounds.

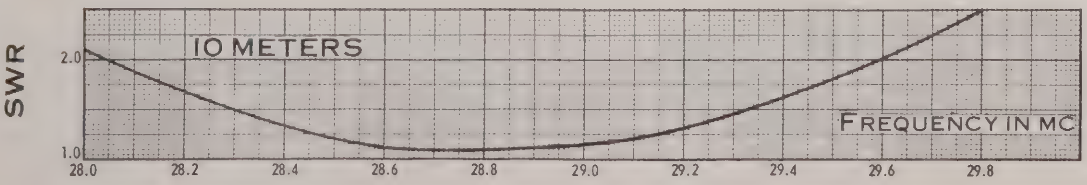
SWR/Frequency Curves

The SWR/Frequency Curves reproduced here were drawn from data compiled during actual field tests of production model antennas. Antenna mounted on ground with four 33' radials.









VERTICAL GROUND PLANE ANTENNAS

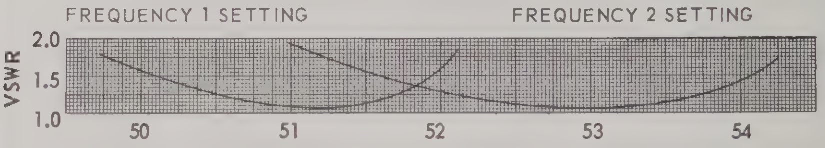
6 meters

DIPLOMAT 6

A 5/8 wave omni-directional antenna for optimum 6-meter VHF base station use is the Diplomat-6 (DI-6). Easy-to-mount and compact.

SPECIFICATIONS AND PERFORMANCE DATA

POWER RATING: 1000 watts AM/CW; 2000 watts PEP SSB.
GAIN: 3.4 db. over reference dipole and 5.5 db. compared to isotropic source.
SWR: 1.5/1 or better.
FEED POINT IMPEDANCE: 52 ohm nominal.
ASSEMBLED WEIGHT: 6 lbs.
SHIPPING WEIGHT: 8 lbs.
WIND LOAD (EIA) std: 31 lbs. at 80 MPH
ANTENNA HEIGHT: 12 ft.
NUMBER OF RADIALS: 3.
ANTENNA MAST MOUNTS on 1" to 1¼" pipe.
TYPE OF TRANSMISSION LINE RECOMMENDED: RG8/U.



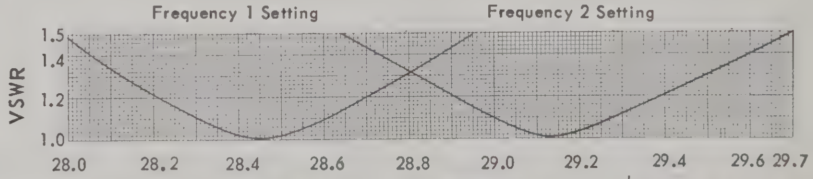
10 meters

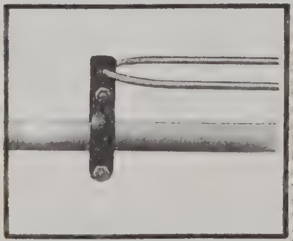
DIPLOMAT 10

10 meters is the up-and-coming DX band . . . the band for round tables . . . local emergency nets. Specifically designed for this band is the Diplomat-10 (DI-10). Easy-to-mount. Compact.

SPECIFICATIONS AND PERFORMANCE DATA

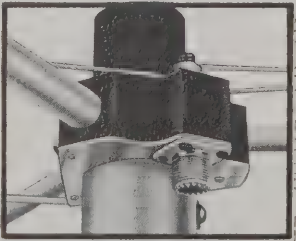
POWER RATING: 1000 watts AM/CW; 2000 watts PEP SSB.
GAIN: 3.4 db. over reference dipole and 5.5 db. compared to isotropic source.
SWR: 1.5/1 or better.
FEED POINT IMPEDANCE: 52 ohm nominal.
ASSEMBLED WEIGHT: 8 lbs.
SHIPPING WEIGHT: 9 lbs.
WIND LOAD (EIA) std: 41 lbs. at 80 MPH.
ANTENNA HEIGHT: 19 ft.
NUMBER OF RADIALS: 3.
ANTENNA MAST MOUNTS on 1" to 1¼" pipe.
TYPE OF TRANSMISSION LINE RECOMMENDED: RG8/U.





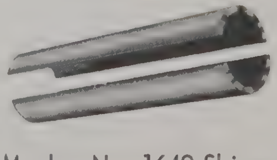
Loading and impedance matching is accomplished through the Mosley 'Induct-O-Match' system utilizing loops of 1/8 inch aluminum rods.

Swaging (tapering the ends of aluminum tubing) is designed to reduce wind load and possible vibrations causing metal fatigue.

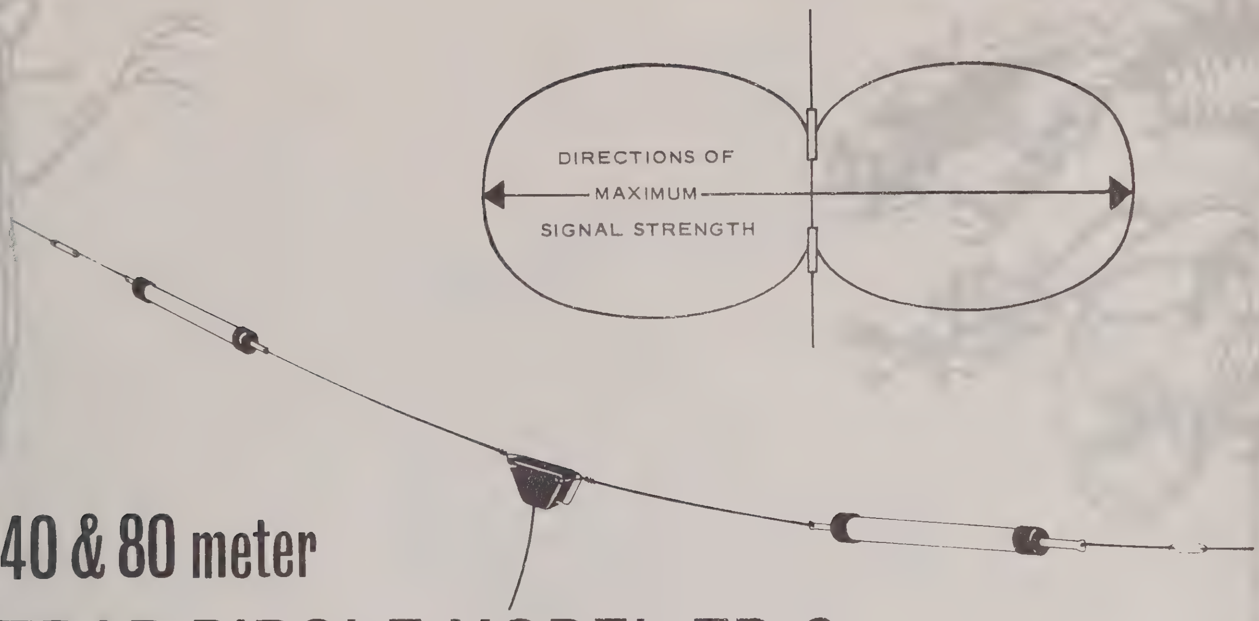


Coax Female Connector is easily fastened to radial support assembly resulting in a water-proof, long lasting connection.

The Diplomat 6 and 10 antennas may be mounted on masts having a maximum pipe size of 1¼" (nominal diameter). But for undersized masts, a Mosley mounting adapter accessory may be purchased. No. 1649 Shims, when placed around mast, permits easy insertion of mast into base mounting tube of antennas. Adapter pieces act as wedges resulting in secure, sturdy, antenna mount.



Mosley No. 1649 Shims.



40 & 80 meter

TRAP DIPOLE MODEL TD-2

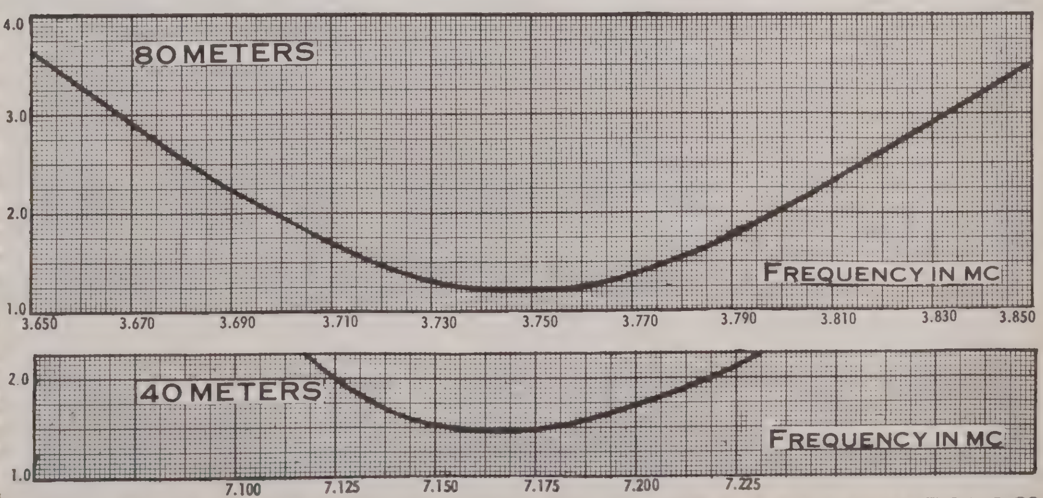
Model TD-2 Doublet antenna resonates at 40 and 80 meters and provides a typical figure eight one half wavelength dipole pattern at each resonant frequency. Parallel resonant trap circuits are used to automatically select the proper electrical length for each band. A center connector holds the No. 14 copperweld wire securely. The traps are enclosed in aluminum and are designed to be frequency stable through wide climatic variations. End insulators are high grade ceramic 4¼ inches long. The TD-2 is an ideal antenna for use at locations where a bi-directional pattern is preferred. This antenna is adjustable for desired resonant frequency on both bands.

SPECIFICATIONS AND PERFORMANCE DATA

SWR:	1.5/1 or better.
POWER RATED:	1 KW AM/CW and 2000 Watts P.E.P. SSB.
MAXIMUM OVERALL LENGTH:	114 feet.
TRANSMISSION LINE:	52 or 72 Ohm Coax Recommended.
ASSEMBLED WEIGHT:	7 Pounds.
SHIPPING WEIGHT:	9 Pounds.

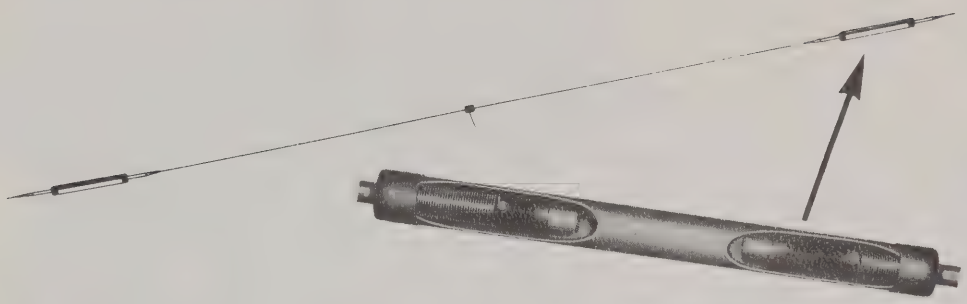
SWR/Frequency Curves The SWR/Frequency Curves reproduced here were drawn from data compiled during actual field tests of production model antennas.

Frequency (mc.)



Mosley Electronics, Inc.
4610 N. LINDBERGH BLVD., BRIDGETON MO. 63042

DIPOLE ANTENNAS



MODEL TD-3 AND TD-3 JR.

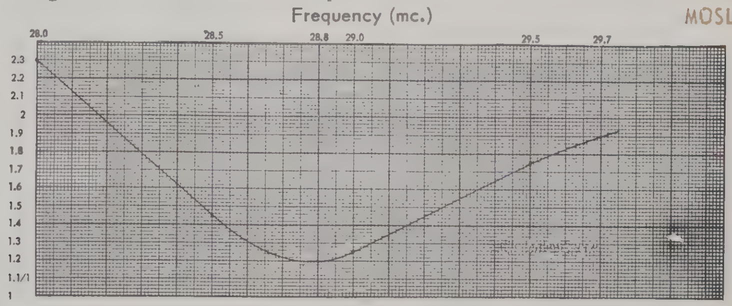
These Trap Doublet antennas require little space and are easy-to-install by attaching 52 or 72 ohm coax line to strain relief center connector and tying insulators to convenient support. Doublets utilize famous Mosley water-proof trap assemblies. Length of TD-3: 53 feet on 40 meters; 25 feet on 20. Length of TD-3 Jr: 54 feet on 40; 24 feet on 20. Antennas may be cut for a choice of bands: 10, 15, 20, meters or 10, 15, and 40 meters. Operate as an electrical one half wavelength on each of the bands with excellent radiation and bandwidth.

TD-3 is designed for 1000 watts AM/CW input to the final or 2000 watts PEP SSB input to the final. TD-3 Jr. - - - 300 watts AM/CW input to the final or 1000 watts PEP SSB input to the final.

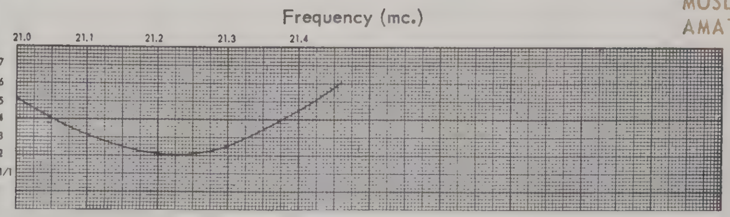
Shipping weight of TD-3 is 5 lbs; TD-3 Jr. is 4 lbs.

SWR/Frequency Curves The SWR/Frequency Curves reproduced here were drawn from data compiled during actual field tests of production model antennas.

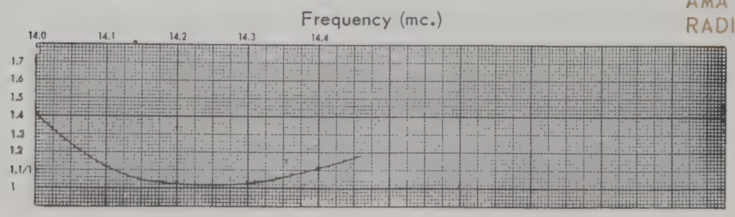
10 METER ►



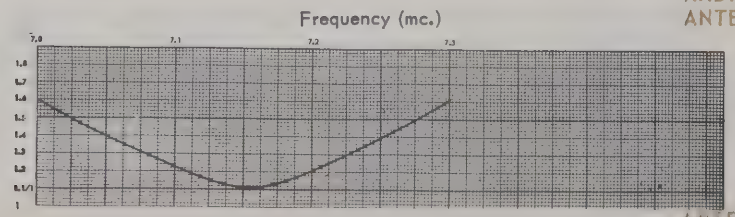
15 METER ►



20 METER ►



40 METER ►



Mosley Electronics Inc.
4610 N. LINDBERGH BLVD. BRIDGETON, MO. 63042

DIPOLE ANTENNAS

EL TORO

This compact three band trap type grounded ¼ wavelength antenna is designed for use in limited space. Automatic bandswitching. Broadband. In kit form. Easily adjusted to resonate in any portion of rated band. Maximum length 58 feet.

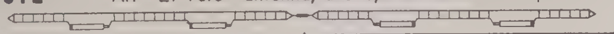
○AVAILABLE IN THREE PRETUNED MODELS○

TW-3X --- Rated to 1000 watts input to the final amplifier on AM and CW, 2000 watts P.E.P. on SSB. Tuned for 20, 40 and 75/80.

TW-3X JR – Rated to 300 watts on AM, 500 watts on CW and 1000 watts P.E.P. input to the final amplifier on SSB. Tuned for 20, 40 and 75/80.

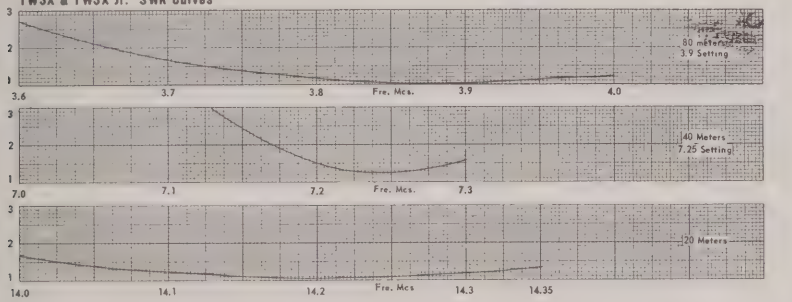
NS-3 --- Rated same as Model TW-3X JR except that it is tuned for the 15, 40 and 80 meter Novice bands.

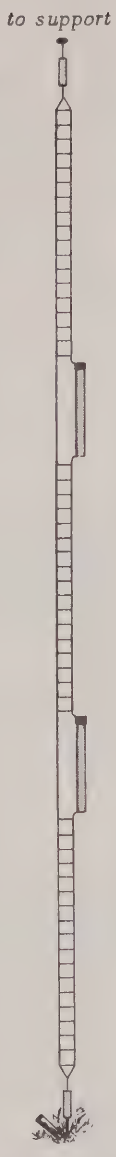
NOTE -- All "El Toro" antenna, above, is available in dipole form.

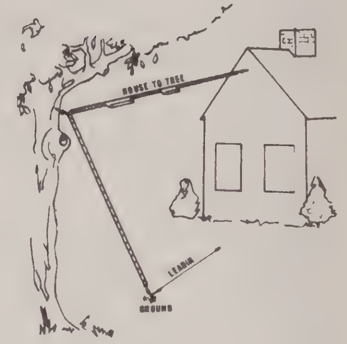


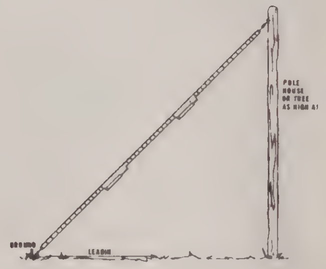
Kit complete with 65 feet of 450 ohm open wire, two condensers of suitable rating, and 3 antenna insulators. A good ground connection within a few inches of ground level is required and may consist of any pipe or metal conduit connected at ground level. Ground rod driven into moist ground satisfactory. Radials required for roof mounting (except for metal roofs). Performance equivalent to most vertical antennas. Weight less than two pounds. Installs in minutes. Utilizes 52 ohm coax line.

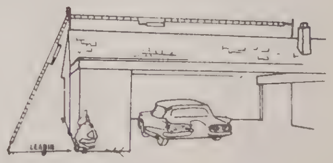
TW3X & TW3X Jr. SWR Curves





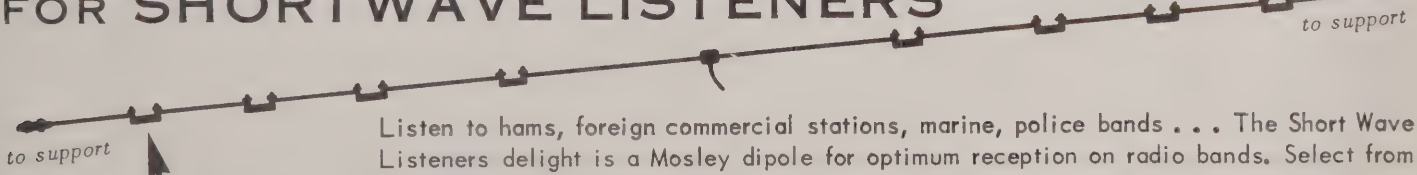



POLE HOUSE OR TREE AS HIGH AS
GROUND
LEADIN



Mosley *Electronics, Inc.* 4610 N. LINDBERGH BLVD., BRIDGETON MO. 63042

FOR SHORTWAVE LISTENERS



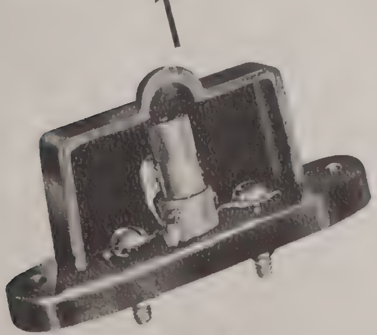
Listen to hams, foreign commercial stations, marine, police bands . . . The Short Wave Listeners delight is a Mosley dipole for optimum reception on radio bands. Select from two available antennas:

MODEL SWL-7 FOR 11, 13,16, 19, 25, 31 AND 49 METERS

Easy-to-assemble dipole kit contains 100 ft. of 75 ohm twin lead, transmission line connector, 50 ft. No. 16 copper wire, 2 glazed porcelain insulators and 8 weatherproof trap assemblies with hardware. Complete instructions included with each kit.

MODEL RD-5 FOR 10, 15, 20, 40, AND 75/80 METERS

Kit is similar to SWL-7 (above) except includes 80 ft. of No. 16 copper wire.



CUTAWAY OF TRAP:

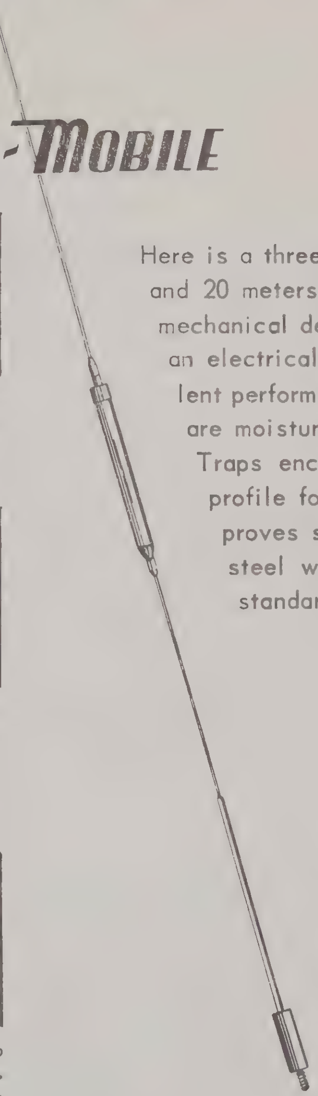
Both SWL antennas weigh two pounds. Well insulated trap assemblies are fully enclosed to assure stable performance in all weather conditions. Antennas resonate over full bandwidth of rated bands.

MOBILE ANTENNAS

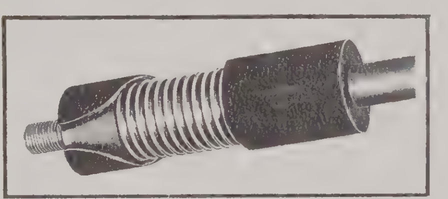
TRAP-MOBILE

200 WATTS AM/CW
800 WATTS PEP SSB

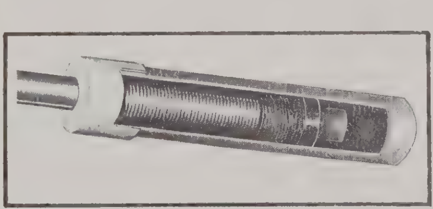
Here is a three band Mobile Whip which operates on 10, 15 and 20 meters with ... NO BANDSWITCHING ... or other mechanical devices. An overall length of 7' 8⅛" provides an electrical ¼ wavelength on each band assuring excellent performance with low SWR over full bandwidth. Coils are moisture-proofed for constant all weather operation. Traps enclosed in polished aluminum cover with slim profile for low wind resistance. Anti-sway design improves signal stability while "in motion". Stainless steel whip sections. Base stud, 3/8"-24, fits all standard mounts. Shipping weight, 6 lbs.



FEATURE: Trap is completely weatherproof . . . sealed against dirt, rain and snow!



FEATURE: Base coil - Material is charcoal activated polyethylene. Unaffected by weather or road shock!



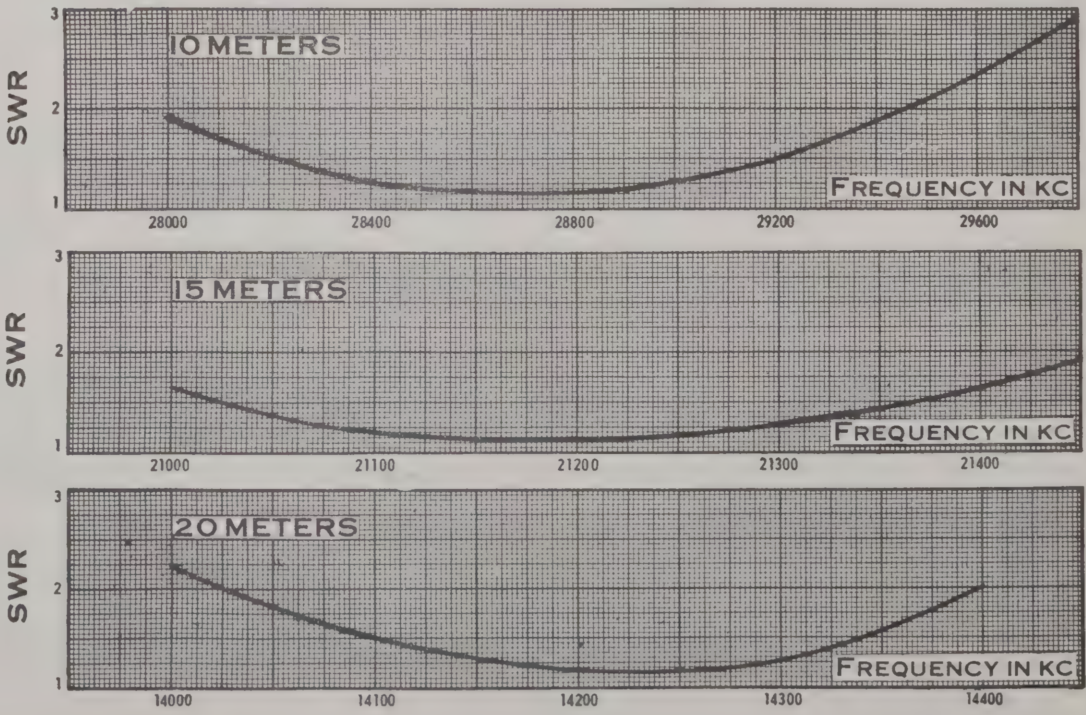
FEATURE: Exclusive MOSLEY trap design assures stable operation. Inductive and capacitive values cannot change!

Will Not Take Set Or Warp!

Stainless steel whip sections (190,000 PSI) permit antenna to lay forward over car for "garaging".

GUARANTEED!
Will Not Take Set!
Will Not Warp!

SWR/FREQ. CURVES FOR MODEL MA-3 TRAP-MOBILE ANTENNA



COAX TERMINATION OUTLETS

Neat coax installations are possible with Mosley coax termination outlets. These expertly crafted easy-to-install outlets terminate antenna coax and rotor leads inconspicuously within wall.

These outlets provide a positive, trouble-free connection eliminating unsightly, straggling leads which detract from the room appearance. Mosley termination outlets, molded of ivory plastic to harmonize with the room decor, permit easy disconnection of transmitter and receiver for cleaning, servicing equipment, and room rearrangement.

C-1PK

Mosley C-1PK outlet consists of an SO-239 Coax Connector mounted on a decor harmonizing ivory plate. Outlet provides a convenient termination of antenna coax. Unit includes F-9 mounting bracket and screws.

C-2PK

Mosley C-2PK outlet consists of two SO-239 Coax Connectors mounted on ivory plate. Unit includes F-9 mounting brackets and screws.

CR-4PK

Mosley CR-4PK outlet combines an SO-239 Coax Connector with four wire rotor socket. Plate is available in ivory color. Unit includes F-9 mounting brackets, 4 wire rotor plug and screws.

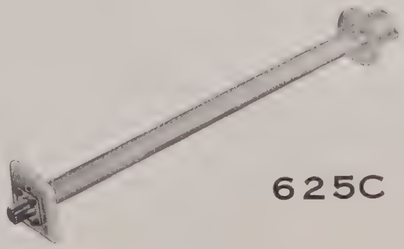
CR-5PK

Mosley CR-5PK outlet comes complete with SO-239 Coax Connector and five wire rotor socket. Ivory plate harmonizes with all interiors. Unit includes F-9 mounting brackets, 5 wire rotor plug and mounting screws.

CR-8PK

Mosley CR-8PK outlet incorporates SO-239 Coax Connector and 8 wire rotor socket. Unit includes F-9 mounting brackets, 8 wire rotor plug and mounting screws.

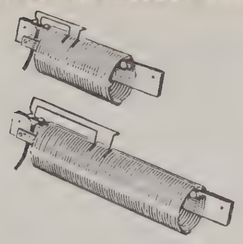
Mosley 625C is intended for use in installations where direct entrance and termination is desired. Will accommodate one coax lead. Available in ivory only. Comes complete with mounting screws.



625C

GENERAL AMATEUR ACCESSORIES

MOSLEY 40-D AND 75/80-D DIPOLE LOADING COILS

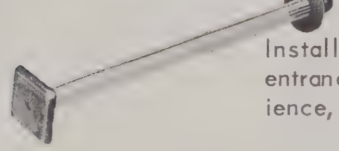


Make a high performance dipole transmitting and receiving antenna at about one half the length of full size dipole! 80 meter antenna is approximately 65' overall! 40 meter antenna, just 37'. Only one coil needed for each antenna. Feed with 52 or 75 ohm coax to help suppress TVI and BCI. Heavy acrylic support bar takes strain off coil. Sturdy clamping member at coax connection. Coils are space-wound with plated No. 12 copper wire and are rated to 1 KW.

MOSLEY DPC-I WEATHERPROOF DIPOLE CONNECTOR

This weatherproof dipole connector will make building a dipole antenna an easier job. Its high strength "Cycolac" construction and corrosion proof hardware add extra durability to the installation at very low cost. Fits RG-8/U diameter to RG-58/U diameter coax lines.

MOSLEY 625 WALL-THRU

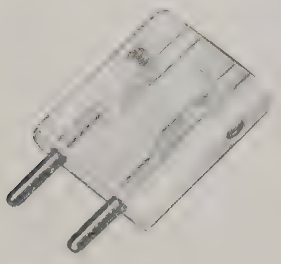


Installs easily, quickly, in any wall up to thirteen inches thick to provide neat, low loss wall entrance for all popular tubular, oval or flat transmission lines. For extra neatness and convenience, a Mosley Universal TV socket may be installed directly on inside plate. In brown or ivory.

MOSLEY E–1010 ANTENNA WEATHER GUARD

Weather Guard, a clear coating compound that protects ferrous and non-ferrous metal surfaces from corrosive action of salt-laden air, moisture, and ultra violet radiation. Applies easily with brush.

MOSLEY 301 TRANSMISSION LINE PLUG



This handy 300 ohm plug fits Mosley crystal holder socket and octal tube socket. Molded of sturdy, clear, low loss plastic. Plated brass set screws hold wires securely without soldering. Plug pins are plated brass.

MOSLEY 301-S SPECIAL SMALL PIN PLUG

Special small pin plug with plated brass pins .050" diameter, spaced .484". Fits small pin crystal socket. Here is a handy, solderless, male connector that will find a multitude of uses in the Ham Shack. Owners of Viking 2 transmitters can use this plug in connection with the antenna relay socket provided at the rear of the rig. Plug molded of sturdy, clear low loss plastic.

MOSLEY WAVE TRAPS

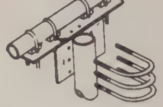
Tunable wave traps to help "eliminate" TVI and BCI. High Q series resonant type may be used on any receiver input, 50 to 600 ohms, balanced or unbalanced. Solderless, easy to install, choose type with range including frequency of interfering stations.

WT-7 – – 6.8 - 8.5 mcs.
WT-14 – – 13.8 - 16 mcs.
WT-21 – – 16-28 16 - 28 mcs.

WT -41 – – 27 -55 mcs.
WT-78 – – 47 - 110 mcs.
WT - 165 – – 100 - 230 mcs.

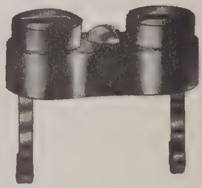
GENERAL AMATEUR ACCESSORIES

MOSLEY AK-60 MAST PLATE ADAPTER



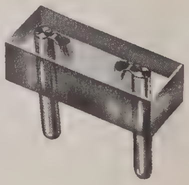
Mast Plate Adapter for adapting your Mosley 1½" mounted beam to fit 2" OD mast. Complete with angle and hardware.

MOSLEY CRYSTAL HOLDER ADAPTERS



Compact, sturdy socket for holders with standard .095" pins spaced .486 to ½". Molded of high temperature polystyrene. Recessed phosphor bronze contacts and solder lugs are one piece for quiet operation under conditions of extreme vibration. Ideal for mobile rigs. Mounts behind panel or under chassis up to 1/8" thick with plated brass machine screw, supplied. Drilling template furnished.

MOSLEY 500, SINGLE CRYSTAL HOLDER SOCKET



MODEL 75-5	¾" to .486 - ½". Takes crystal holder with pins spaced ¾" and plugs into socket having ½" spaced holes. Fits octal socket and Mosley crystal sockets described above. Acrylic body with plated brass pins.
MODEL 5-75	½" to ¾". Takes crystal holder with pins spaced .486 to ½" and plugs into socket with ¾" spaced holes. Also fits any 5 or 6 pin tube socket. Precision machined acrylic body with plated brass pins.
MODEL 5S-75	The same as 5-75 except it takes crystal holders with .050" pins with .485" spacing.
MODEL 5-5S	Adapts crystal with .093" pins and .485" spacing to socket that accepts .050" pins with .485" spacing.
MODEL 5S-5	Adapts crystal with .050" pins and .485" spacing to socket that accepts .093" pins with .485" spacing.
MODEL 2-5S	Adapts midget crystal .040 pins — spaced .192" to socket that accepts .050" pins spaced .485".

Many special crystal holder adapter types for marine, air and other communication service applications have been supplied by Mosley. We are equipped to design and fabricate adapters and similar devices for a wide variety of uses. Your inquiry is invited and quotations on quantity requirements will be promptly submitted.

MOSLEY HAS A COMPLETE LINE OF CITIZENS BAND AND BUISINESS BAND ANTENNAS, TV/FM AND HI-FI/STEREO ACCESSORIES. . . FOR FURTHER INFORMATION CONTACT YOUR LOCAL MOSLEY DISTRIBUTOR OR MOSLEY REPRESENTATIVE.

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Your Mosley Representative

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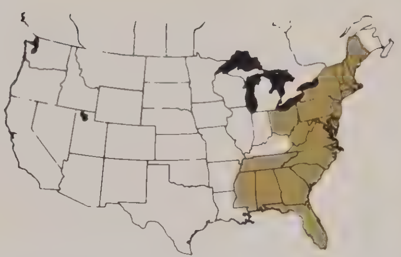

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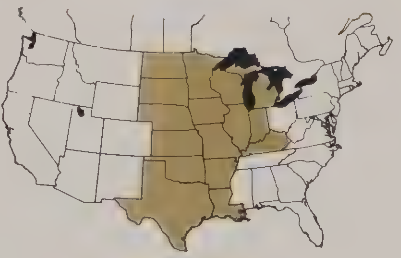

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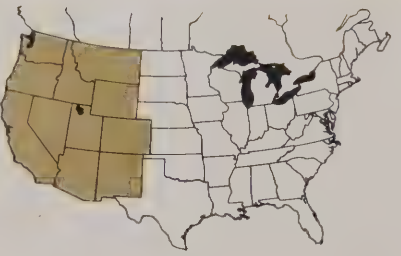

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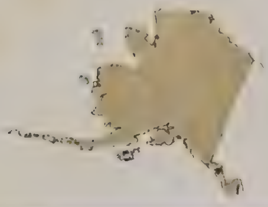

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FM-5

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BROAD BAND FM ANTENNA
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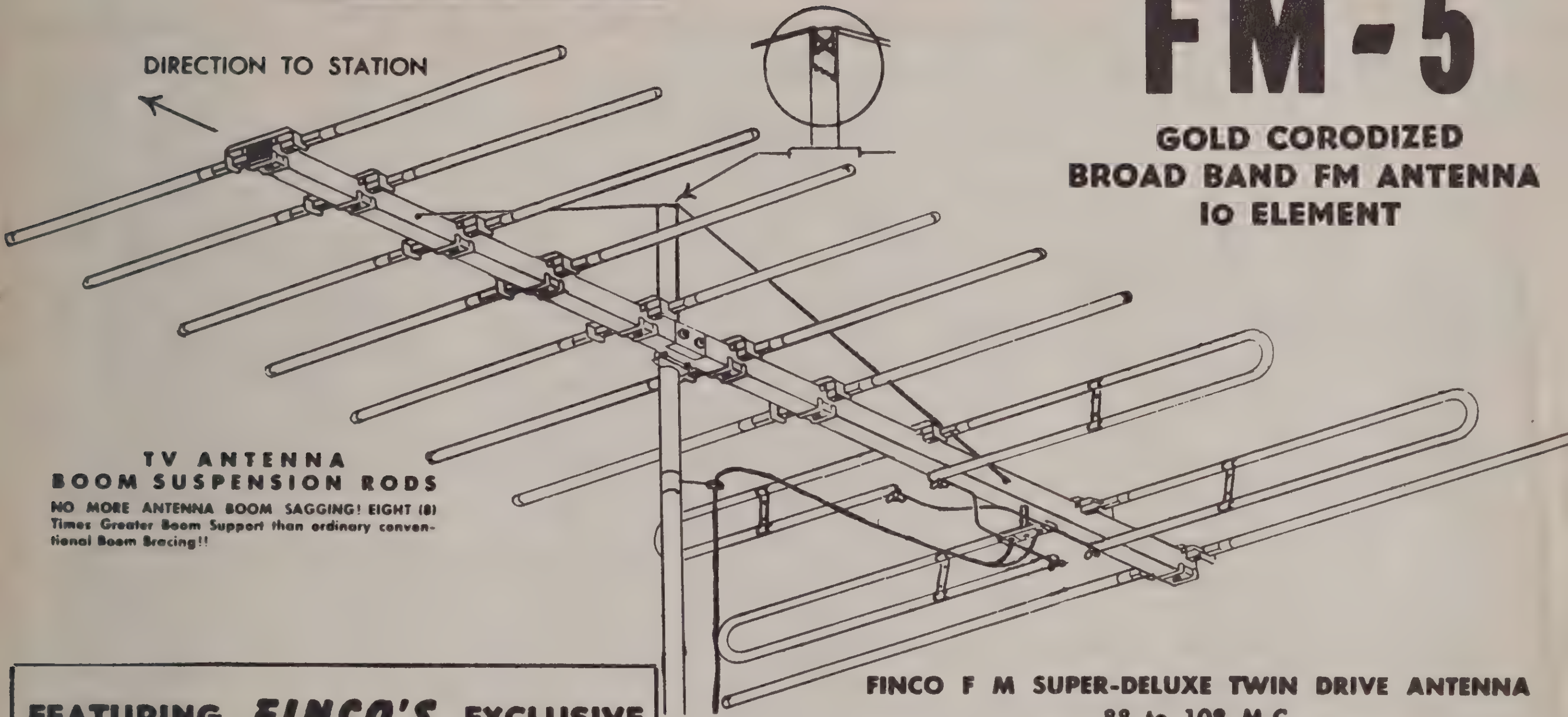

TV ANTENNA BOOM SUSPENSION RODS
NO MORE ANTENNA BOOM SAGGING! EIGHT (8) Times Greater Boom Support than ordinary conventional Boom Bracing!!

FEATURING *FINCO'S* EXCLUSIVE
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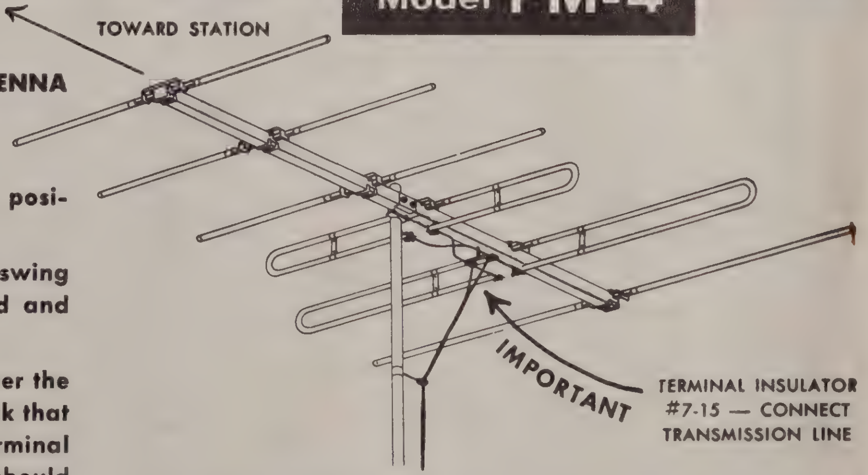
FINCO F M SUPER-DELUXE TWIN DRIVE ANTENNA
88 to 108 M.C.

This design is based on FINCO ultra high geomatic T. V. antenna principles, using a specially engineered twin drive element having impedance control "T" match stubs. This FINCO F M First enables maximum gain to be realized over the full 88 to 108 M.C. band. These proved features coupled with extra wide spaced elements, delivers SUBSTANTIALLY GREATER SIGNAL

Model FM-4

FINCO F M SUPER-DELUXE TWIN DRIVE ANTENNA
88 to 108 M.C.

1. Open all straight elements and lock into open position by "snap lock" brackets.
2. On both folded dipoles, loosen nuts and then swing into open position until brackets snap closed and retighten nuts.
3. IMPORTANT — Connect transmission line under the wing nuts, ON THE TERMINAL INSULATOR block that is mounted on the cross over feed lines. This terminal block is properly located at the factory and should not be moved along the feed line.
4. Attach antenna to mast with "U" bolt and saddle assembly, and dress transmission line down mast and to F M receiver with proper stand-off insulators.
5. This ultra high gain antenna has a very narrow directivity pattern to insure maximum signal and fidelity, and therefore must be oriented accurately in the direction of the F M stations.



This design is based on FINCO ultra high geomatic T. V. antenna principles, using a specially engineered twin drive element having impedance control "T" match stubs. This FINCO F M First enables maximum gain to be realized over the full 88 to 108 M.C. band. These proved features coupled with extra wide spaced elements, delivers SUBSTANTIALLY GREATER SIGNAL and sells for less than STANDARD 8 TO 10 ELEMENT designs. Deluxe heavy duty square aluminum boom, exclusive "Lock-Tite-No-Tilt" saddle mounting, and "box girder" snap out self-aligning brackets are completely pre-assembled with double wall re-inforced all aluminum elements.

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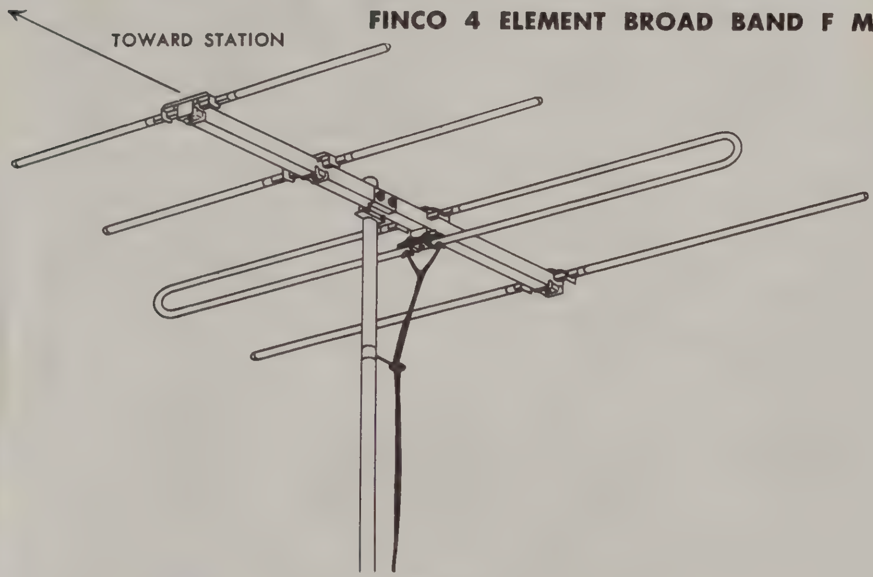
FORM NO. 17-1223

two new FINCO® Hi-Fi-Phased . . . Hi Gain BROAD BAND FM ANTENNAS

Model FM-3

FINCO 4 ELEMENT BROAD BAND F M YAGI

88 to 108 M. C.



A broad banded 4 element Yagi for additional gain on F M band. 88 to 108 M.C. All aluminum construction with square boom, special "Lock-Tite-No-Tilt" saddle bracket for permanent horizontal alignment, and double-wall re-inforced elements pre-assembled with snap out brackets.

impedance match type of folded dipole for maximum energy transfer.

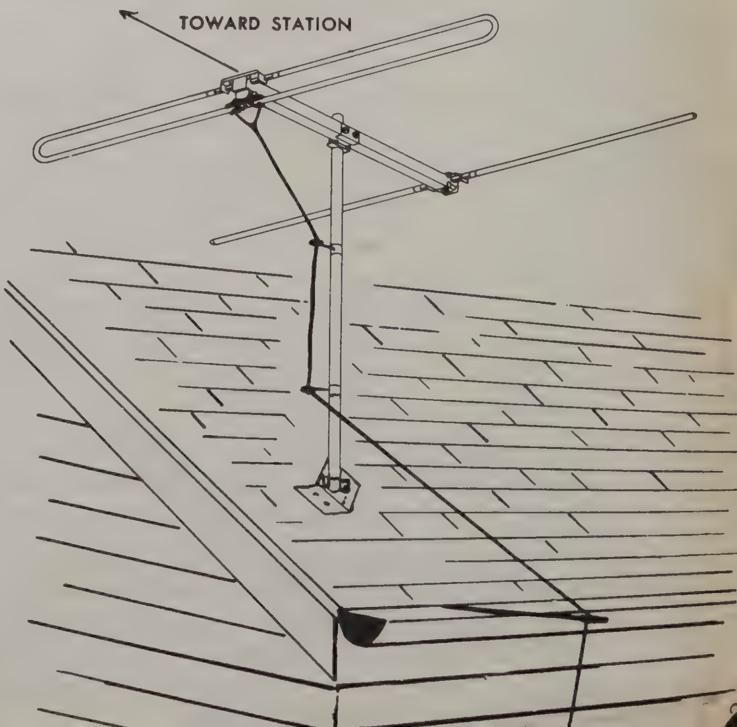
1. Open all straight elements and lock into open position by "snap lock" brackets.
2. On folded dipole, loosen wing nuts, and then swing into open position until brackets snap closed.
3. Connect transmission line under folded dipole terminal Wing Nuts and tighten.
4. Attach antenna to mast with "U" bolt and saddle assembly, and dress transmission line down mast and to F M receiver with proper stand-off insulators.
5. This high gain antenna has a narrow directivity pattern, insuring clean, clear signals and therefore must be oriented with accuracy in direction of F M stations.

MODEL FM-2

COMPLETE F M FOLDED DIPOLE & REFLECTOR ANTENNA INSTALLATION KIT — 88 to 108 M. C.

A top quality folded dipole and reflector F M antenna kit, designed for optimum reception of the 88 to 108 M.C. band with gain up to 3.5 D.B. The all aluminum boom and elements are completely pre-assembled with snap out, self aligning aluminum brackets, supplied with 5 ft. mast, mast base, 50 ft. of 300 ohm twin line, two mast type stand-off insulators, three wood screw-eye stand off insulators.

1. Unfold the reflector and lock into open position by "snap lock" bracket.
2. On folded dipole, loosen wing nuts, and then swing into position until brackets snap closed.
3. Mount horizontal boom to mast with "U" bolt and saddle bracket assembly.
4. Connect transmission line to terminals of folded dipole and support line down mast with mast type stand-off insulators.
5. Bring line down roof or house side with the wood screw eye stand-off insulators.
6. Universal base will mount on any surface from horizontal flat roof to vertical side wall and allow antenna mast to be adjusted to vertical.
7. Orient the antenna in the direction of the major F M stations to be received.



[illegible] the Model 103 to a [illegible] system consists of a [illegible]

[illegible] Page [illegible]

[illegible] outside [illegible] on either side.

[illegible] is completely [illegible] to [illegible] the [illegible] are under a [illegible] before the [illegible] clamp is put on. [illegible] have been applied, [illegible] clamp

[illegible]

aw
3-4-21

94.15
18.5
80.65

94
18
76
4
9

94.25
18.5
75.75
94.25

98
18
82

Dimension [illegible] Overall Length [illegible] Figure 1

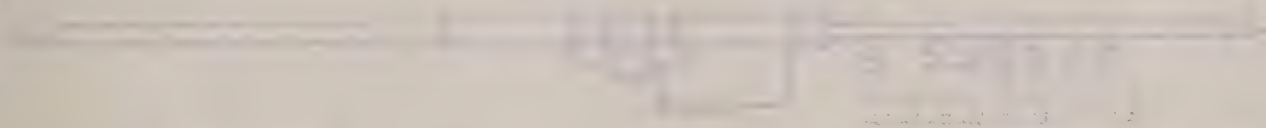
Dimension C

[illegible]

Dimension [illegible] Spacing Between
Reflector and Driven Element

[illegible]

Dimension [illegible] Overall Length [illegible] Figure 2



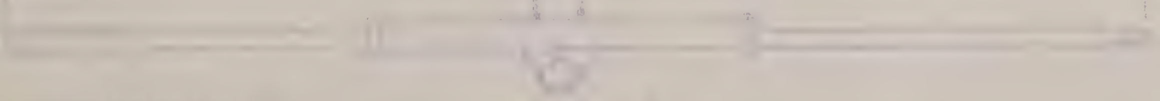
Dimension D

[illegible]

Dimension 3 Spacing between
Director and Driven Element

[illegible]

Dimension [illegible] Overall Length [illegible] Figure 3



Dimension [illegible]

[illegible]

I. GENERAL INSTALLATION CONSIDERATIONS - 10, 15 & 20 METER BEAMS

A. Mounting

The importance of a safe strong supporting structure for your antenna system cannot be overemphasized. In general, self supporting steel towers and self supporting telephone poles are the most desirable types of supports. The type and depth of these ground mounts are, of course, dependent upon soil conditions at your particular locality. Steel towers, poles, or masts may be used if the guy wires are broken up with strain insulators, in order to avoid guy wire resonances. House mounted antenna support structures are to be avoided, but when used, they should be very carefully designed to take into consideration the structural characteristics of your house or building.

The detrimental effect of surrounding objects is often underestimated in the average antenna installation. Extensive experimentation at our antenna range has pointed up the fact that these effects can be very serious, and the problem of getting the antenna in the clear from surrounding objects is a very very important one. It should be pointed out in particular, that power lines and other metal objects of considerable mass or length, will deteriorate the performance of any antenna. It is therefore highly recommended, that one of the first considerations in any antenna installation, be the positioning of the array as far away as possible from surrounding objects. In this respect, a little additional transmission line with the accompanying transmission losses, is much to be preferred over the close proximity of surrounding objects.

All HY-GAIN communications antennas are designed to fit a 1½" OD mast. A 1¼" ID steel galvanized plumbers pipe (which is 1½" OD) is highly recommended for mast use. It is strong, and also low in cost. A special boom to mast clamp (Model SMC-2) is available for 2" OD mast. Price $3.95

B. Height

In general, any antenna system operating above 14 MC in frequency should be at least 32' above ground. If mounted on a house or building, the antenna should be at least 20' above the roof. This is a minimum height for good operation. Additional height, if it can be achieved safely, will increase the performance of the array and greatly reduce QSB problems. A point of diminishing returns is usually reached at a height of about 90', and structures above this height are very difficult and costly to install in a safe manner.

5. Lightning and Weather Protection

Your antenna installation may be adequately protected from lightning, if you properly ground the base of the tower or mast, which supports your antenna. A proper ground consists of No. 8 or larger copper or aluminum wire, running directly and by the shortest path, to a ½" by 8' copper clad steel ground rod driven into the earth. All other grounds, for example, water pipes, vent pipes should be avoided. The chassis of your transmitter should also be grounded with a similar grounding system.

All HY-GAIN antenna systems are supplied with 2 weather protecting substances. ELECTROSEAL and liquid NEOPRENE.

The ELECTROSEAL is an anticorrosive compound, which contains finely granulated zinc particals. When applied to the inside telescoping surfaces of your element sections, it resists corrosion, and the zinc particals pierce surface oxidation layers to form a good long lasting electrical connection. ELECTROSEAL is available from your HY-GAIN distributor at 39¢ per ounce.

Liquid NEOPRENE is used to seal the coaxial capacitor and coaxial fitting on the gamma match assembly. In certain heavily salt laden atmospheres, it may be desirable to coat the entire antenna with liquid NEOPRENE. Liquid NEOPRENE is available from your HY-GAIN distributor at $1.95 per ½ pint.

6. Stacking

If you wish to stack more than one antenna on one mast, some additional precautions should be observed.

When large arrays are being stacked, the increased wind resistance necessitates heavy wall masting, and heavy duty supporting towers or structures.

Harmonically related beams, for example 10 and 20 meters, should be stacked a minimum of 8' apart. A 10-15 and 20 meter combination may be stacked a minimum of approximately 5' between bays, due to the odd harmonic relation of the 15 meter array. It should be mounted in the center, with the 10 meter beam above, and the 20 meter beam below. When antennas are stacked, you will find that some detuning effect, both on the parasitic and driven elements, will result and some gain and front to back ratio is sacrificed, compared to a single or tri-bander antenna mounted in the clear. Due to this detuning effect, the beams will also be more difficult to match, and may actually need to be matched in place on the mast at their proper stacking relationship to the other antennas in the assembly.

7. Rotators

The HY-GAIN 10 meter antenna may be rotated by a heavy duty TV rotator. For all larger antenna systems, the HY-GAIN Roto-Brain is recommended.

II. INSTALLATION INSTRUCTIONS

A. Description

The Model 103 antenna is a 3 element parasitic array, designed for operation in the 10 meter band.

B. Mechanical Specifications

Boom length	108"
Boom outside diameter	1½"
Boom material	Hot dipped galvanized steel
Longest element length	17' 2½"
Element sections diameters	7/8" - 3/4"
Element material	6061T-6 Aluminum
Net Weight	23 pounds
Turning radius	11'
Wind surface area in square feet	2.409
Wind load at 100 MPH in lbs	71.3

C. Electrical Specifications

Gain in db over half wave dipole	Approximately 8 DB
Front to back ratio in db	Approximately 15 - 25 DB
Standing wave ratio at resonance	1:1
Maximum power input	1 KW

D. Lengths and Spacings

The element lengths and spacings were very carefully, experimentally derived at our test range. They are shown for every 100 KC across the entire band, in a sketch of the antenna on Page 5. It is recommended that no adjustment be attempted, and the antenna is guaranteed to perform as specified, if it is at least 32' high and relatively in the clear of surrounding objects.

E. The Gammaxial Matching System

The HY-GAIN Gammaxial Matching System consists of a standard gamma match with a coaxially formed reactance cancelling capacitor built into the assembly. The length of the gamma rod (which matches the antenna), and the length of the capacitor section (which cancels the inductive reactance of the gamma rod), are given in a sketch on Page 4 of this manual. It is only necessary for you to set up the gamma assembly in accordance with these directions, to obtain a very low, excellent SWR. (If your antenna is at least 32' high and relatively in the clear.)

Am SWR reading of 2 to 1 or less, at resonance, is considered very good, and results in negligible transmission line losses. If you desire to improve the SWR reading in your particular installation, proceed as follows. With any standard 52 ohm standing wave ratio bridge, inserted in the coaxial line feeding your antenna - adjust the gamma rod length for minimum SWR, and then adjust the capacitor section for minimum SWR.

F. Transmission Lines

The HY-GAIN 6, 10, 15 and 20 meter beams, are designed for use with 52 ohm coaxial transmission lines. RG-8U coaxial cable is recommended, since it has low loss characteristics, together with high power handling capacity. RG-58U small diameter coax may be used where the line runs are short, and power levels do not exceed 100 watts. RG-17U may be used where line runs are extra long and, or power levels are extremely high.

The following attenuation chart may be helpful in choosing your cable.

ATTENUATION CHART	ATTENUATION DB PER 100 FEET-VSWR 1.0:1				
Type of Line	15MC	30MC	50MC	200MC	Velocity Factor
450 ohm					
Coax cable, 52 ohm, RG-58U	1.6	2.3	3.5	7.8	.66
Coax cable, 52 ohm, RG-8U	.69	1.0	1.4	3.2	.66
Coax cable, 52 ohm, RG-17U	.24	.41	.54	1.6	.66

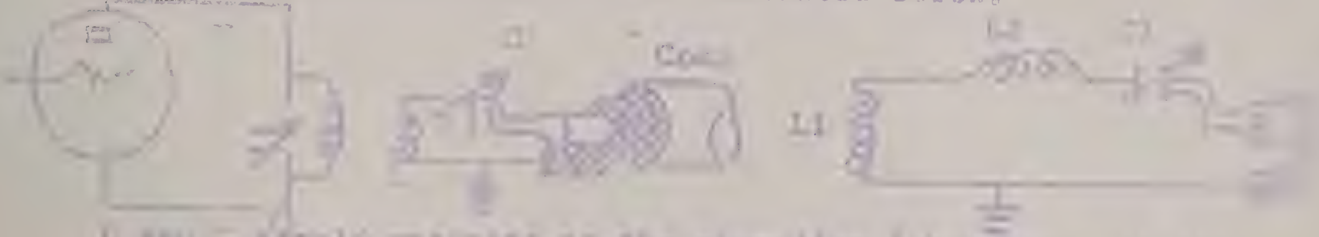
G. Coupling to the Transmitter

1. Link Coupled Output Circuits

If you experience any difficulty in loading your transmitter properly the following suggestions should be helpful.

a. Vary the length of the coaxial cable slightly, longer or shorter.

b. Use tuned link circuits as indicated below.



L and C should resonate at the operating frequency. In the alternate for small links (with a small number of turns) L can be inserted in series, to make the inductance [illegible] which will resonate at the operating frequency. The capacity used in these tuned link coupled circuits should not exceed the maximum capacity indicated in the following table.

CAPACITY MMFD REQUIRED FOR
COUPLING TO 52 OHM COAX WITH TUNED
COUPLING CIRCUITS

Frequency	
[illegible]	115 MMFD
[illegible]	90 MMFD
[illegible]	60 MMFD
[illegible]	35 MMFD

In most cases these tuned link circuits will increase the coupling to a satisfactory point.

2. Pi-section Output Circuits

Transmitters using pi-section output circuits will not normally show any difficulty loading into 52 ohm coaxial cable. Once again, if some difficulty is experienced, changing of the coaxial transmission line length should obtain proper loading.

3 Antenna tuning

Transmitters using antenna tuners will not normally show any difficulty loading into 52 ohm coaxial cable, Installation instructions or adjustment details of the particular tuner circuit in use should, of course, be followed.

If you have any questions or specific installation considerations address all correspondence to:

ANDREW A. ANDROS, W0LTE
1135 North 22nd
Lincoln, Nebraska

[illegible]

[illegible] TYPE OF PAINT

[illegible]
foot length [illegible] aluminum [illegible]
[illegible] both washers and nuts

[illegible]

[illegible] foot length [illegible] O.D. x .035 wall aluminum tube
[illegible] aluminum [illegible]
[illegible] nuts
[illegible]

[illegible]

foot length [illegible] O.D. x .0[illegible] wall aluminum tube
foot length [illegible] O.D. aluminum [illegible] ends
[illegible] both washers and nuts

[illegible] foot length [illegible] O.D. x .032 wall steel tube
[illegible]

[illegible]
[illegible] for B2
[illegible] for B2
[illegible] aluminum tube clamps for A1, B1, and [illegible]

[illegible]

[illegible] corrected [illegible] this order, [illegible] by circling the number [illegible] first [illegible]

[illegible]
[illegible]
[illegible] Robinson

RW 11/1/50

Figure 1

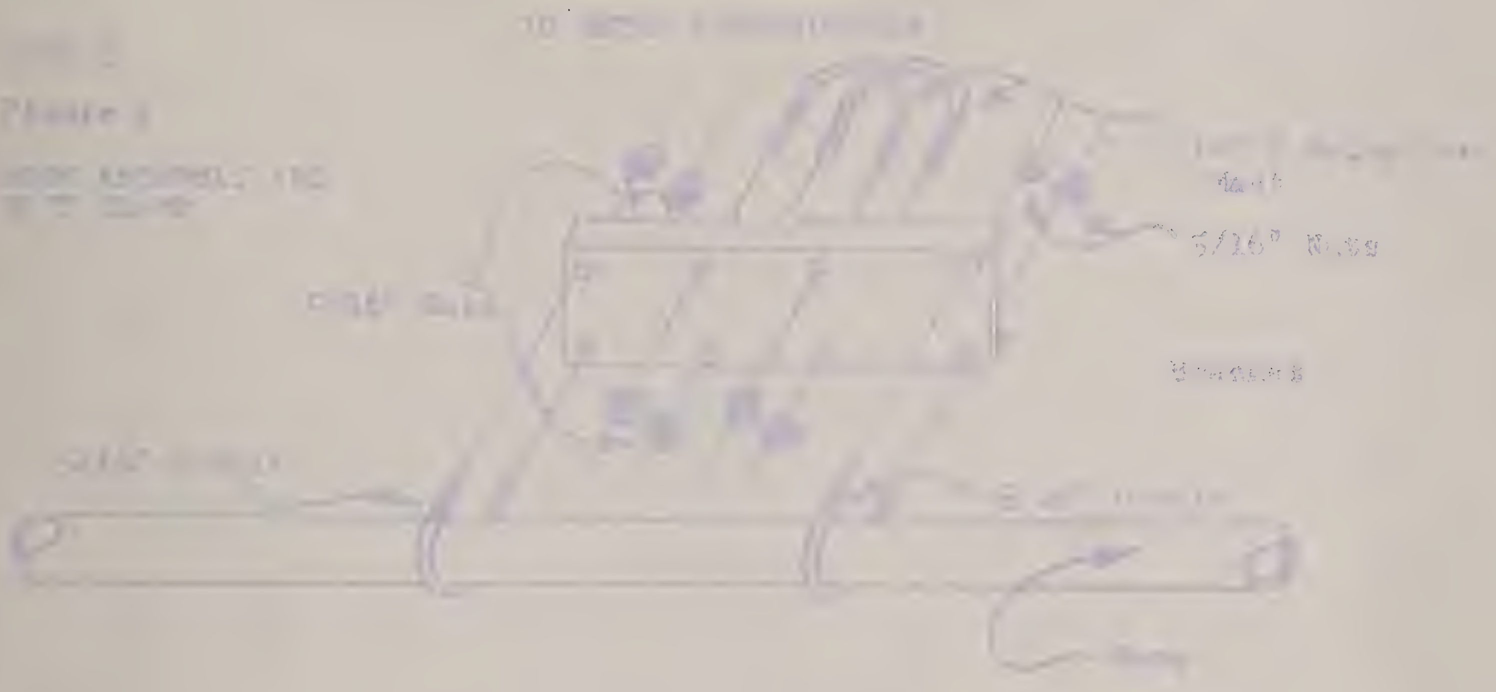


Figure 2 REFLECTOR

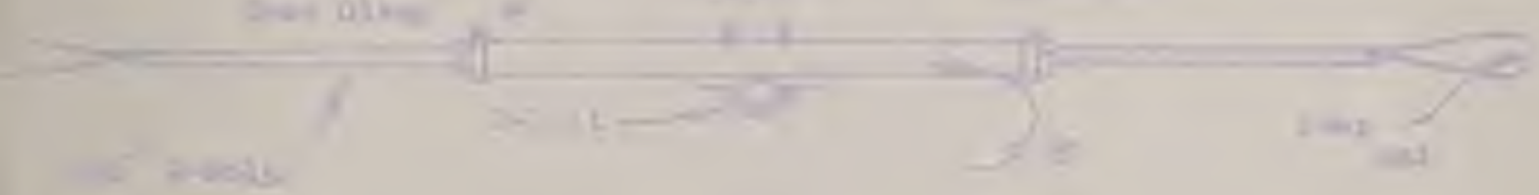


Figure 3 Dipole

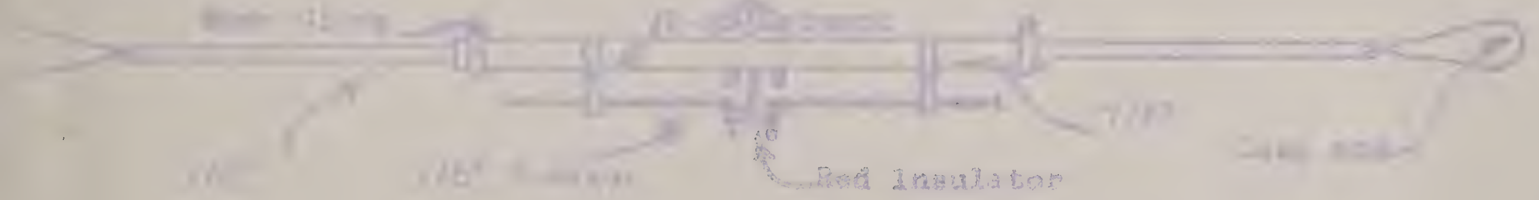
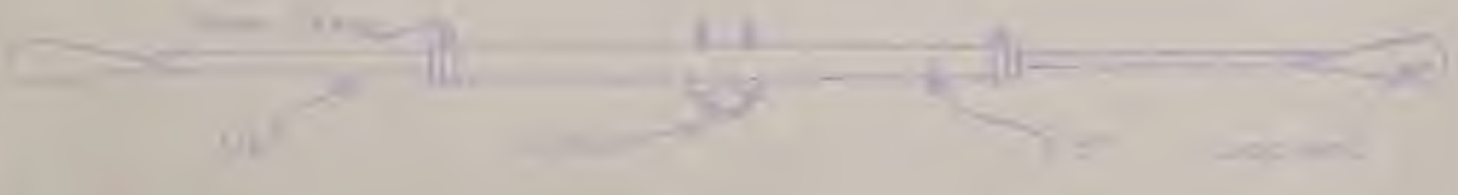
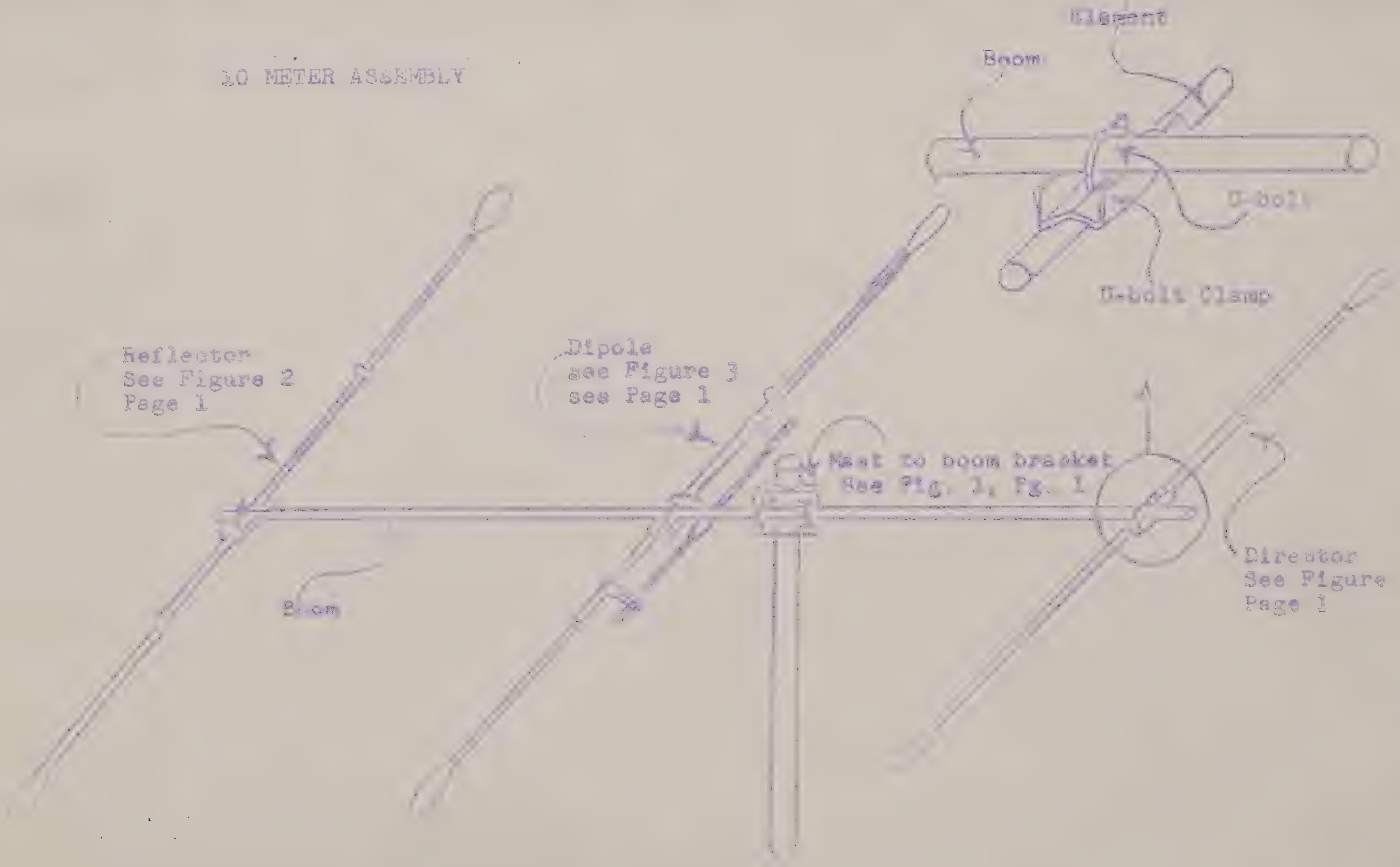


Figure 4 DIRECTOR



10 METER ASSEMBLY



[illegible]

10 METER BEAM

[illegible]

[illegible] and sometimes of two piece construction. The instructions and [illegible] assemble same as two piece eliminating use of sleeve.

The boom is of two piece construction held together with an aluminum sleeve. Refer to Figure 1 on Page 1 and proceed as follows: Insert boom sections into sleeve and line up holes for 1/4" x 2" bolts. Insert the bolts through holes in sleeve and boom and then through holes in brackets making sure flanges on bracket are facing away from boom. Slip lock washers on bolts and tighten with nuts.
Insert two of the 5/16" U-bolts around sleeve and through matching holes in bracket. Slip lock washers on bolts and tighten with nuts.
Insert two of the 5/16" U-bolts through the bracket from the flanged side and slip on lock washers and engage the nuts only. These U-bolts are for mounting the antenna to the mast and should not be tightened until antenna is completely assembled and in place on the mast.
If your boom is of one piece construction no braces are required, [illegible] braces. The braces are fastened to the boom with 1/4" x 2" bolts, and to the mast with a U-bolt and clamp. See page 2, lower right hand circle. The braces are shown mounted below antenna, if necessary or if desired the braces may be reversed and mounted above the antenna.

Assemble elements in following procedure: Refer to page 1, Figures 2, 3, [illegible]. All elements are coded with a piece of printed tape

A. Slip a 7/8" hose clamp over each end of 7/8" O.D. aluminum center section. Do not tighten hose clamp.
B. Insert 3/4" O.D. end sections into 7/8" O.D. center section.
C. After the usual procedure has been followed for adjusting the element for length then tighten hose clamps.
D. The element is mounted to the boom as follows: Loosen the two nuts on the U-bolt so boom will slip between clamp and curved area of U-bolt. When this element has been positioned on boom tighten the two nuts on U-bolt. Refer to page 1, upper right hand corner for [illegible]

[illegible] elements are assembled in the same manner so repeat above procedure [illegible]

INSTALLATION

A. The importance of a safe, strong supporting structure for your Ham Beam cannot be over-emphasized.

In general, self-supporting steel towers and self-supporting telephone poles are the most desirable types of supports. The type and depth of these ground mounts are of course, dependent upon soil conditions at your particular locality. Guyed towers, poles, or masts may be used if the guys are broken up with strain insulators in order to avoid guy wire resonances. House mounted antenna support structures are to be avoided, but when used they should be very carefully designed to take into consideration the structural characteristics of your house or building.

B. MASTS

All HY-GAIN communications antennas are designed to take 1½" O.D. mast. A 1¼" I.D. steel, galvanized plumber's pipe (which is 1½" O.D.) is highly recommended for mast use. It is strong and also low in cost. A special boom to mast clamp, model SMC-2, is available for 2" O.D. masts. Price $3.95.

C. STACKING

If you wish to stack more than one antenna on one mast, some additional precautions should be observed to assure a sufficient safety factor, due to the increased wind resistance of the stacked installation.

First of all, a very heavy rotator, and preferably a braking device, should be used to rotate the assembly.

Secondly, very heavy thrust and radial bearings must be employed to support the weight of the arrays.

Third, the mast must be re-enforced as follows:
A 1" I.D. galvanized, steel plumber's pipe should be inserted for the full length of the 1¼" I.D. plumber's pipe and welded at each end. This double thick mast will be very strong - actually equivalent in strength to tubing of a much larger diameter.

Harmonically related beams, for example, 10 & 20 meters, should be stacked a minimum of 8 ft. apart. A 10, 15 & 20 meter combination may be stacked a minimum of approximately 5 ft. between bays due to the non-harmonic relation of the 15 meter array. It should be mounted in the center with the 10 meter beam above and the 20 meter beam below. When antennas are stacked, as above, you will find that some detuning effect, both on the parasitic and driven elements will result and some gain is sacrificed compared to a single antenna mounted in the clear. Due to this detuning effect, the beams will also be more difficult to match and should actually be matched in place on the mast at their proper stacking relationship to the other antennas in the stacking assembly.

D. HEIGHT

In general, all Ham Beam antennas above 14 megacycles in frequency should be at least 32 ft. above ground. This is a minimum height for good operation. Additional height, if it can be achieved safely will increase the performance of the array and greatly reduce QSB problems. A point of diminishing returns is usually reached at a height of about 70 feet and structures above this height are very difficult and costly to install in a safe manner.

E. SURROUNDING OBJECTS

The detrimental effect of surrounding objects is often under-estimated in the average Ham Beam installation. Extensive experimentation at our antenna range has pointed up the fact that these effects can be very serious and the problem of getting the antenna in the clear from surrounding objects is a very, very important one. It should be pointed out in particular that power lines and other metal objects of considerable mass or length will very severely deteriorate the performance of any Ham Beam. The front to back ratio is particularly adversely affected. It is therefore, highly recommended that one of the first considerations in any Ham Beam installation be the positioning of the array as far away as possible from surrounding objects. In this respect, a little additional transmission line with the accompanying transmission losses is much to be preferred over the close proximity of surrounding objects.

TRANSMISSION LINES AND MATCHING

A. MATCHING DEVICES (LINE TO ANTENNA)

1. THE FOLDED RATIO DIPOLE is used on both the five and ten element two meter Ham Beams. On these 2 meter beams, the folded ratio dipole is adjusted to a terminal resistance of approximately 300 ohms. No adjustment is necessary if the array is operated on or near resonant frequency. This folded dipole may be fed directly with a 300 ohm line of any type or a 72 ohm coax line through a half wave balun.

2. THE "T" MATCH. All 6, 10, 15, and 20 meter beams, come with a factory pre-assembled "T" match. This "T" match is the most efficient, and easiest to adjust matching system in general use today. The "T" match can be set according to formulas or it may be adjusted through the use of test instruments. Adjustement procedure and dimensions for pre-setting the "T" match are given in a subsequent page of these instructions. The diagram below, Fig. I shows a ½ wave balun used to properly feed the "T" match with coax.

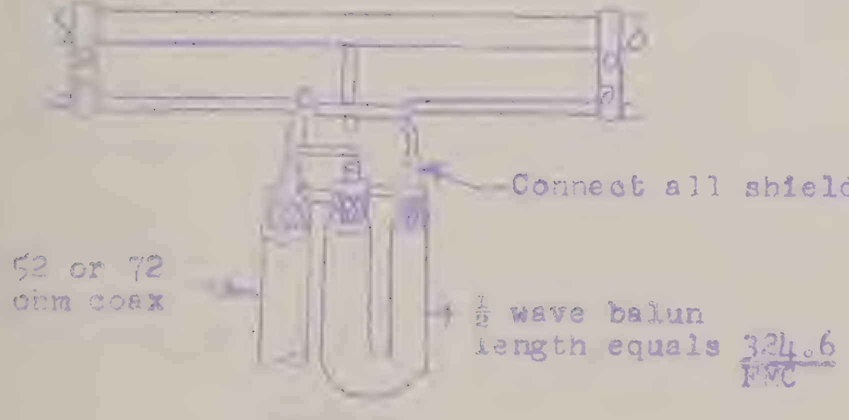


FIGURE 1

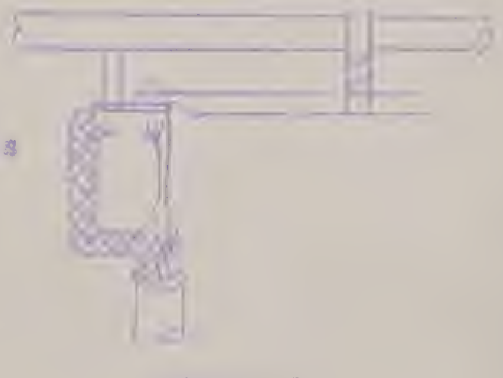
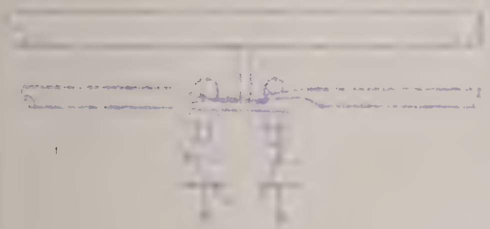


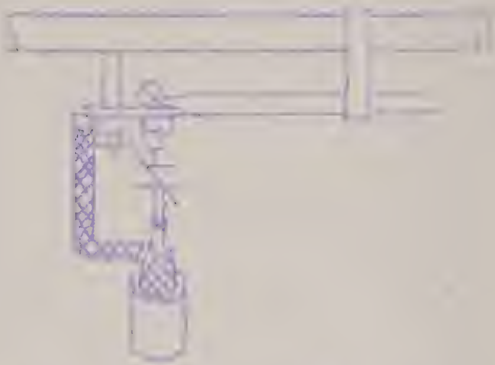
FIGURE 2

3. THE GAMMA MATCH. The gamma match is a modified version of a "T" match designed for coaxial lines. ½ of the "T" match assembly is removed and the coaxial cable attached as shown above in Fig. 2. Adjustment procedure is the same as the "T" match except, of cours , there is only one shorting bar to be moved.



"T" Match showing series condenser

BAND	MAX. CAP. VALUE
6	10MMF
10	50MMF
15	75MMF
20	150MMF



Gamma Match showing series condenser

FIGURE 3

When using coaxial lines it is recommended that a ½ wave balun and "T" match be used. Better balance, more symmetrical pattern and greater ease of adjusting will result. This ½ wave balun actually performs two functions. It enables the coax to present a balanced characteristic to the balanced antenna load. This greatly reduces line radiation or line antenna effect. It also transforms the impedance of the coax to a value four times greater. When the coax balun is used the "T" match shorting bars are adjusted in a normal fashion as indicated subsequently. When RG-8U coax is used with a ½ wave balun the "T" match shorting bars should be near the 200 ohm position and near the 300 ohm position for RG-11U.

With "T" or Gamma match systems it may not be possible to get a perfect 1 to 1 standing wave ratio due to the reactance of the "T" or Gamma rod. This reactance can be eliminated and a perfect match obtained by inserting a variable capacitor in series with the Gamma rod or in series with the "T" rods. This capacitor should have the approximate values of (Fig.3.) mounted in a weather proof housing on the antenna and should be adjusted as to balance the null or reduce SWR reading to the lowest possible value. Standard double spaced variables of the midget type can normally handle up to a full KW input. A VERY GOOD SWR OF BELOW 1.5 to 1 SHOULD BE OBTAINABLE WITHOUT THESE SERIES CAPACITORS.

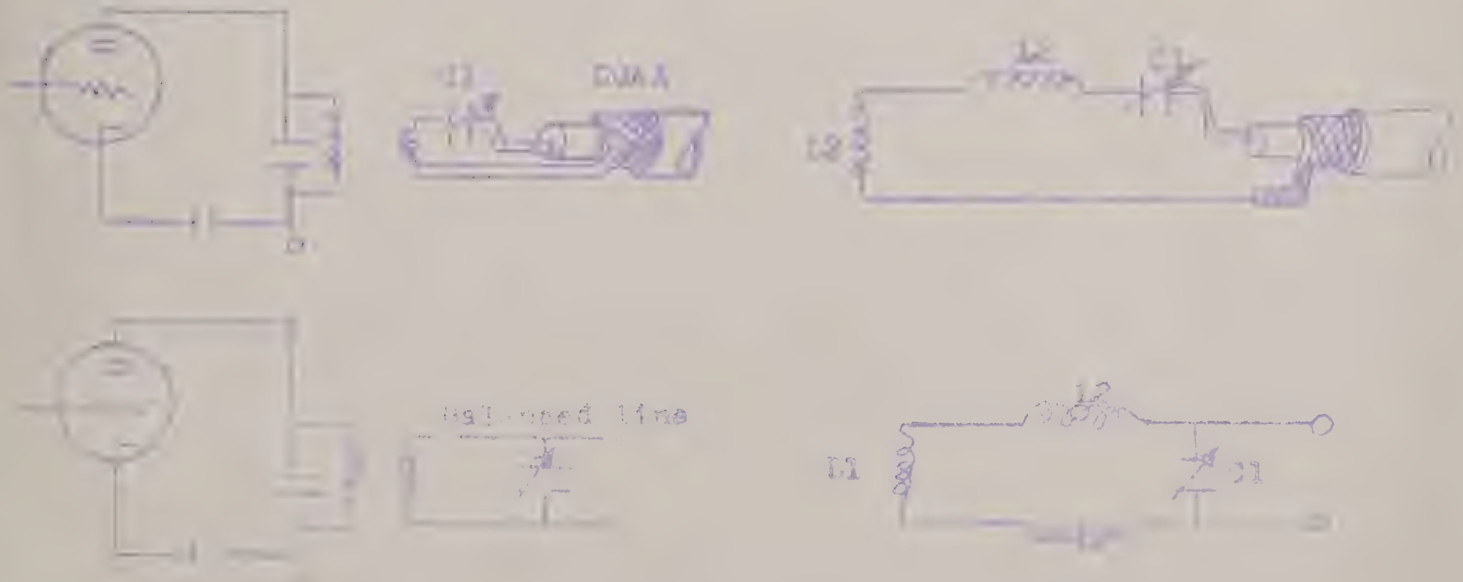


FIGURE 4

B. MATCHING DEVICES (TRANSMITTER TO LINE)

A. LINK COUPLED FINALS

Transmitters with link coupled outputs will normally match any transmission line of 50-450 ohms impedance when properly designed link coupled circuits are used. If you cannot obtain sufficient loading with your particular link coupling circuit, the following suggestions may be helpful.

(a) If the line is flat, (matched properly to the antenna with a very low SWR) your variable link must be, in most cases, very tightly coupled to the tank circuit.

(b) Sometimes better coupling can be obtained with link coupled circuits if the transmission line is an even multiple of half wave lengths, taking into consideration the velocity factor of the transmission line. If you still fail to get sufficient loading, try the above tuned link coupled circuits. See Fig.4.

L1 and C1 should resonate at the operating frequency. In the alternative for small linsk (with a small number of turns) L2 can be inserted in series to make the inductance come up to a value which will resonate at the operating frequency. The capacity used in these tuned link coupled circuits should not exceed the maximum capacity indicated in the following tables.

CAPACITY MMFD REQUIRED FOR COUPLING TO FLAT
LINES WITH TUNED COUPLING CIRCUITS

[illegible]	52 OHM	72 OHM	300 OHM	450 OHM
14 MC	174	75	75	40
21 MC	40	55	60	52
28 MC	10	10	10	30
[illegible] MC	[illegible]	25	25	[illegible]

In most cases these tuned link circuits, whether used with coax or balanced lines will increase the coupling to a satisfactory point.

2. PI SECTIONS

A large number of the later model, factory built transmitters use the Pi Section output circuit. This circuit will normally match the transmitter to any lone of 50 to 450 OHMS. If difficulty is experienced in obtaining enough loading with your Pi section output circuit, the following suggestions may be helpful. Instead of using multiples of a half wave length of your transmission line, increase this length by approximately one-tenth wave length or prune the line slightly one way or the other to see if loading can be increased. If this does not help, decrease the capacity of the output condenser of your Pi section or decrease the inductance therein.

3. ANTENNA TUNERS

In the great majority of cases no particular difficulty will be experienced in matching the transmitter to the line through the use of an antenna tuning unit. The various antenna tuning units, usually have a good set of operating instructions which should enable

you to load your transmitter very adequately. In most cases, antenna tuners are not necessary to obtain sufficient loading if above procedures are followed.

C. COAXIAL TRANSMISSION LINES

Coaxial transmission lines are certainly to be preferred for use at all amateur frequencies up to about 50 megacycles. At 50 megacycles and above, the losses in RG-8U and RG-11U coax lines become rather severe and their use should be closely analyzed by the amateur to determine whether the advantages in their use are great enough to overcome the line losses at these frequencies. Rg-8U and RG-11U lines, when properly matched to the antenna, will transfer energy very efficiently below 50 megacycles. RG-17U, although rather costly, will operate without excessive losses through 2 meters. Mechanically, coaxial lines are impervious to weather conditions and they are very effective in reducing TVI.

D. BALANCED TRANSMISSION LINES

Ribbon type transmission lines, of the reciving type, have about the same loss characteristics as coaxial transmission lines so that their only advantage is their lower cost. Open wire type parallel lines, however, have the lowest possible losses and are desirable where the frequency is very high or it is desired to keep the losses at a minimum figure.

E.

ATTENUATION CHART

ATTENNUATION
DB PER 100 FEET-VSWR 1.0:1

TYPE OF LINE	15MC	30MC	50MC	100MC	VELOCITY FACTOR
Open wire line, #12 copper	.07	.1	.15	.23	.96 - .99
Riboon line, receiving type, 300 OHM	.4	.62	.83	1.8	.82
Tubular line, transmitting type, 300 ohm, Amphenol 14-076	.35	.52	.70	1.5	.79
Ribbon line, transmitting type, 300 ohm, Amphenol 14-023	.9	1.15	2.2	4.2	71
Coax cable, 52 ohm RG-8U	.66	1.0	1.4	3.2	.66
Coax cable, 75 ohm RG-11U	.68	.9	1.3	3.2	.66

THE DETERMINATION OR ADJUSTMENT OF LENGTHS

There are three basic methods for setting up a beam antenna for efficient operation. The one chosen will depend upon the individuals' time and the equipment available.

A. FORMULA METHOD

The formula method is, of course, the quickest and easiest way to get a beam into operation, and it is, in fact, adequate and will result in good beam performance. In this method, lengths of the driven element, the parasitic element, and the spacings between elements together with the length of the shorting bar in the "T" or Gamma match sections, are set according to formulas given under the model number of the beam in a

subsequent page of this instruction manual. Remember, when you select your frequency of operation, that the beam can perform at its best only on this particular frequency and its performance will deteriorate, somewhat, at higher and lower frequencies.

THE MODIFIED FORMULA METHOD (PREFERRED)

The modified formula method, herein described, is highly recommended for any amateur beam installation. It actually consists of setting the elements, lengths, and spacings according to formula and adjusting the "T" or Gamma matching section by the experimental method. Shorting bars on the "T" or Gamma match section, whichever is in use, should be set, for a starting point, according to the dimensions given subsequently. The beam should now be mounted on a temporary mast at least 8 to 12 ft. above ground, or if it is easily accessible, on the permanent supporting structure. In this case the same formulas, as listed under the model number in a subsequent page of this instruction manual, are used to set up the beam. Next the transmission line which you have decided upon is connected to either the "T" or Gamma match and adjustments are made as follows:

1. IF YOU HAVE AN SWR BRIDGE, insert the bridge in the transmission frequency. The switch on the SWR meter should be set to the "in" position, and enough energy to produce a full scale reading obtained. Next, switch the meter to the SWR position and read SWR on the meter scale. Vary the frequency of your low power transmitter or exciter feeding the transmission line to see if a lower SWR occurs at any different frequency than the one upon which you desire to operate. If this occurs, it means that the driven element is slightly off resonance and it should be adjusted by telescoping the end sections in or out until the point of minimum SWR occurs at your frequency. If this SWR is still too high, adjust the shorting bars on "T" or Gamma match slightly longer or shorter than their formula position until the desired SWR point is reached. Transmission line losses will be kept within very low values if an SWR of less than 2 to 1 is obtained.
2. IF YOU HAVE AN ANTENNASCOPE, it should be connected to the driven element matching section through an electrical half wave length, of any kind of transmission line (be sure to take into account the velocity factor of the line when determining this half wave length.) The antennascope, of course, must be excieted with either a grid-dip meter or not more than one watt output of your exciter on the frequency you choose. Adjust the shorting bars on the "T" or Gamma match section until a perfect complete null is obtained at the desired frequency, the driven element of the beam must be adjusted until it is resonate.

THE FIELD STRENGTH ADJUSTMENT METHOD

In the field strength adjustement method, the matching device, is adjusted in accordance with the instructions outlined above. Some small additional gain and front to back ratio may be obtained, however, by critical and time consuming adjustment of the element lengths. There are many ways to tune up an antenna by using field strength measurements. This is one of the simplest and easiest for the amateur to handle. Set the antenna up according to formula and install it on a temporary mast about 8 to 12 feet above ground in a clear open field if possible. The elements can then be reached by use of a step ladder. Match the antenna to a short length of transmission line of the same type you will use in your final installation. Attach this feed line to the beam, and to your communications receiver with an "S" meter on it. Next, construct a 300

ohm twin lead folded dipole in accordance with these dipole dimensions, 6 meters 8ft., 10 meters 16 ft., 15 meters 24 ft., 20 meters 32 ft. (not critical.) Feed this dipole antenna with a small amount of energy from your transmitter at the desired frequency of operation. This dipole must be located at least several hundred feet from the beam to be adjusted and preferrably a thousand feet or more. Turn the back of your beam (reflector side) toward this dipole and adjust your transmitter so that the receiver S meter reads somewhere on scale. Adjust the reflector for minimum signal strength. Now adjust the director for minimum signal strength. Readjust the reflector and director again. Turn the beam around towards the folded dipole, and observe the front to back ratio. It should be in the order of 15 to 30 DB, depending upon the proximity of surrounding objects and in particular, power lines and metal objects. Remember, if the antenna is too close to surroundings, it will exhibit very little front to back ratio. It is recommended that you tune the beam for maximum front to back ratio because the point of maximum front to back ratio is actually the most critical point to adjust on any parasitic antenna. The forward gain is just slightly less at this maximum front to back ratio point. In reality, this added front to back ratio is about the only improvement derived from this critical field adjustment over the formula method. The resonant frequency of a beam antenna, when adjusted 8 to 10 ft. above ground, will be 25 to 50 KC's lower in frequency than it is when mounted at least 32 feet above ground.

If you have any specific design considerations, questions or problems, please address all correspondence to:

Roger B. Olson
HY-GAIN ANTENNA PRODUCTS
1135 North 22nd Street
Lincoln, Nebraska

[illegible]

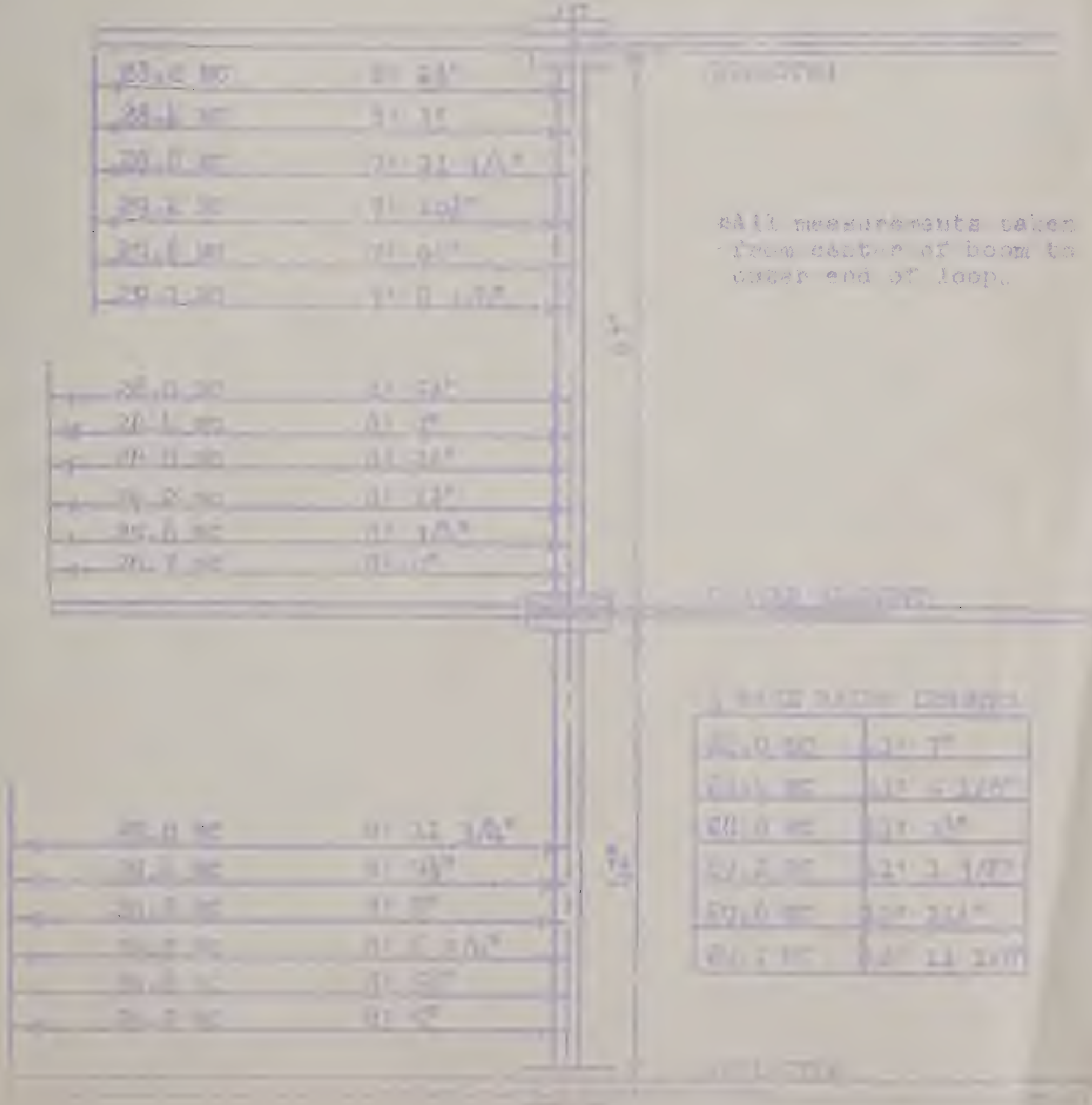
[illegible] 3 element, 10 meter beam should be set up according to the following formulas and dimensions:

Driven element length in feet 474/FMC
Director length 460/FMC
Reflector length 500/FMC

Overall length in inches from shorting bar to shorting bar on "T" match section for use with the following transmission lines:

[illegible]
[illegible]

Element positions are marked on the boom and [illegible] these points over the entire 10 meter band.



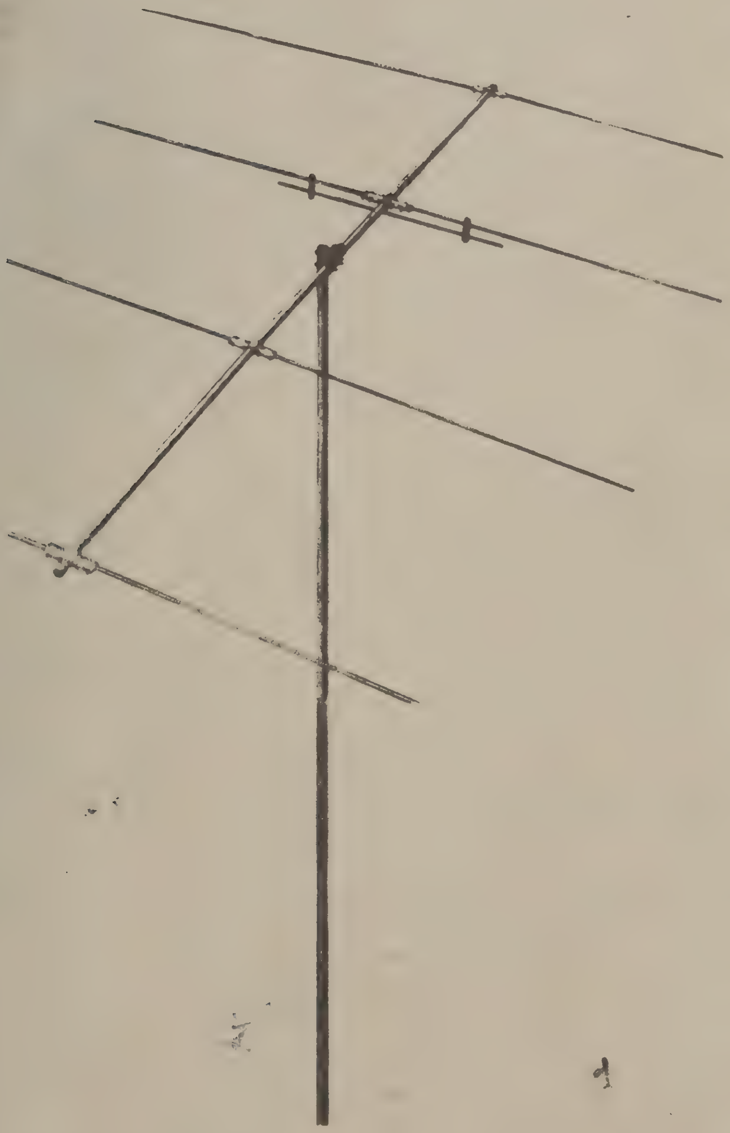
*All measurements taken from center of boom to outer end of loop.

hy-gain

64 B (230)

INSTALLATION & OPERATION INSTRUCTIONS

HY-GAIN ELECTRONICS CORPORATION
Rural Route 3 Lincoln, Nebraska 68505



DESCRIPTION

The Model 64B is a four element six meter beam optimum spaced for maximum forward gain. It has a unique new "beta match" system that allows the best possible match to coaxial cable with the broadest possible band pass.

NOTE

If resonance is affected by environmental surroundings, shorten the Driven Element to raise the frequency and leng then the Driven Element to lower the frequency. Shorten the DE in 1'' increments until desired results are obtain

FEEDLINE & SWR

The Model 64B can be matched to 52 ohm coax using the balun supplied. Without the balun the input impedance is 200 ohms. The SWR can be 1.1:1 with proper installation and necessary care taken in trimming the coaxial feedline.

ELECTRICAL SPECIFICATIONS

Gain	12.7db
Front-to-Back Ratio	20-25db
Maximum Power Input	1KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms
Uni-directional pattern	

MECHANICAL SPECIFICATION

Longest Element	9'
Boom Length	12 ft
Turning Radius	8 ft
Net Weight	8 lbs
Maximum Wind Survival	100 mph
Mast Diameter	1 1/4" to 1 5/8" OD
Boom Diameter	1 1/4" OD

WARRANTY:

Hy Gain Electronics Corporation guarantees for a period of 90 days from date of purchase each new product manufactured to be free from defects in workmanship and/or materials. Any part or accessory shall be replaced free of charge providing the defect is in our opinion due to faulty workmanship and/or material, and not caused by tampering, abuse, normal wear or poor installation. No further guarantee or warranty is implied and in accepting delivery the purchaser assumes full responsibility for proper installation and service arrangements.

This warranty is valid only if the Owner's Warranty Card has been filled out by the purchaser and mailed to Hy-Gain at time of original purchase

Hy-Gain Electronics Corporation reserves the right to make changes in current production models without being obligated to incorporate such changes in earlier production model

ASSEMBLY INSTRUCTIONS

( ) Take the parts from the carton and check them against the parts list

( ) Select the boom back up plate, the boom to mast brackets and the four 1/4-20 x 3/4'' screws.

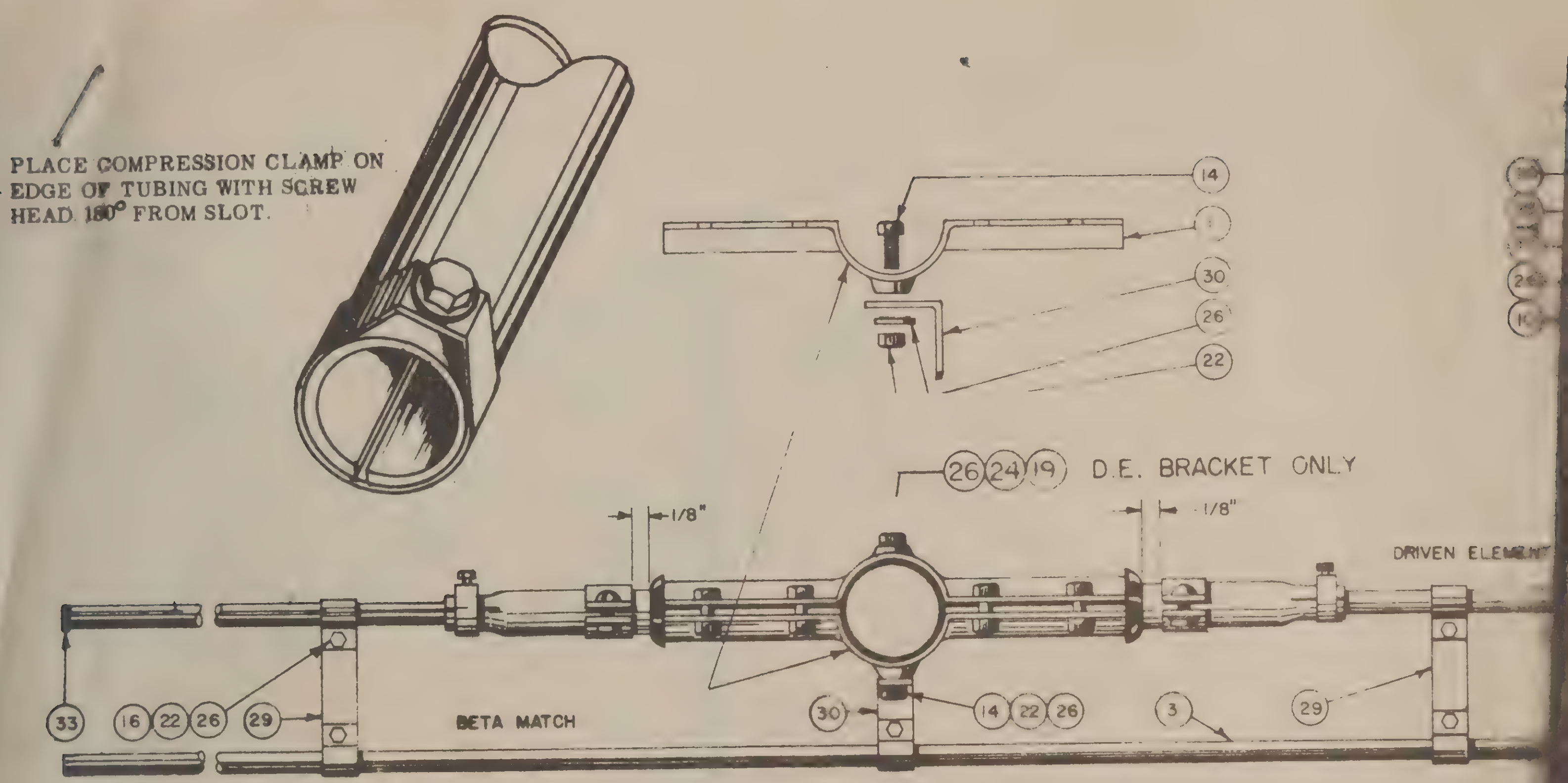
( ) Place the boom to mast bracket on the back-up plate t align holes and place the screws in the four outside holes Tighten loosely.

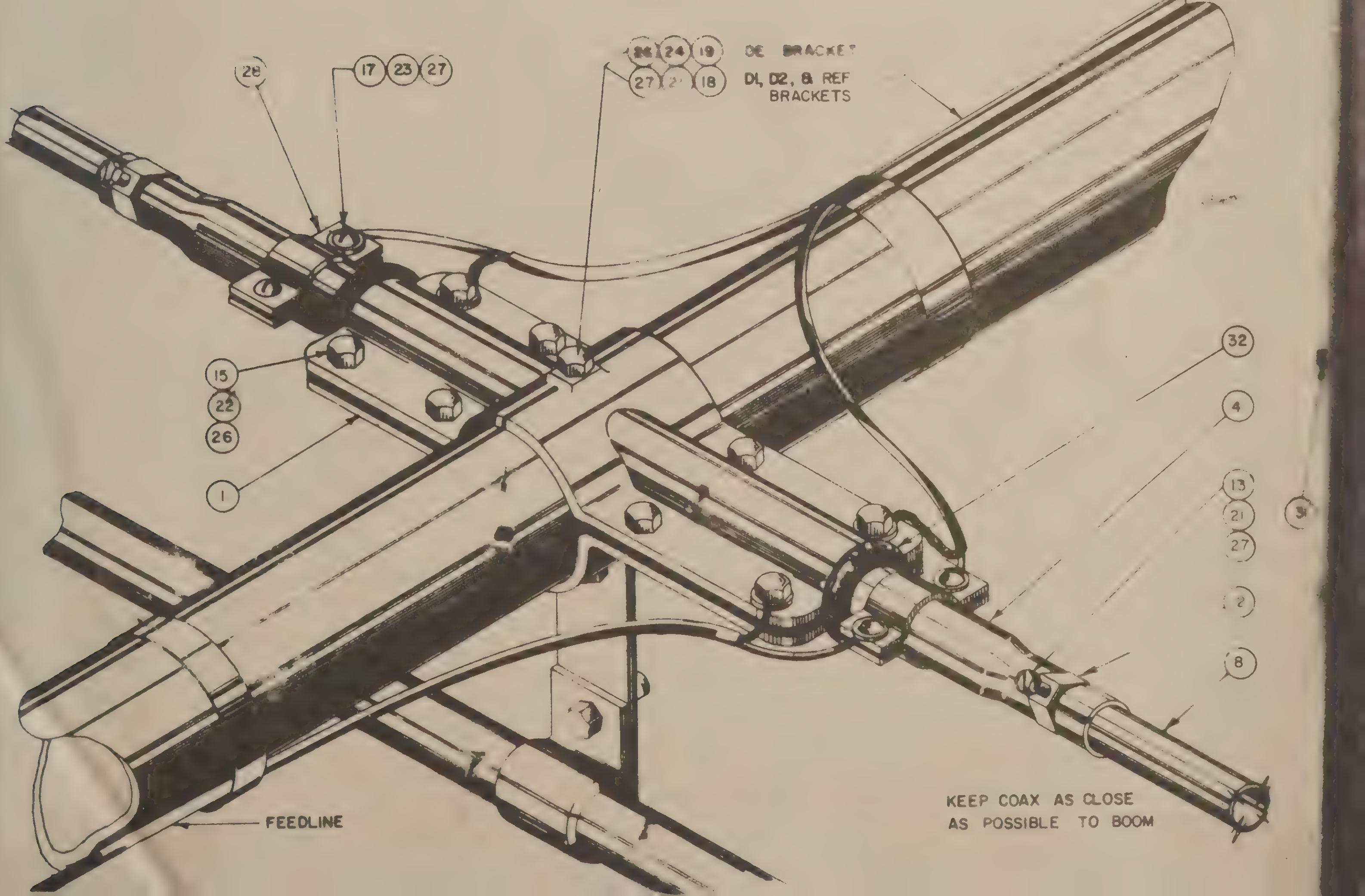
( ) Select the two sections of boom and slip them equa distances until they meet at the center. Now tighten th screws you have placed in the brackets.

( ) Select the 3 pair of boom to element brackets and the pair of boom to driven element brackets. Place a 1/4-2 x 1/2" screw with square nut in the large brackets and 10-24 x 3/8'' screw with a square nut in the smaller brackets in the center hole. Do not tighten at this time. This will now be called the anchor screw.

( ) Place one of the small pair of brackets on one end of the boom (the end that measures approx. 68 1/4" from the center of the boom to mast bracket) this will be the reflector element to boom bracket. Tighten the brackets loosely using 1/4-20 x 3/4" screws. Slip the 5/8 x [illegible] 1/2 inch tubing

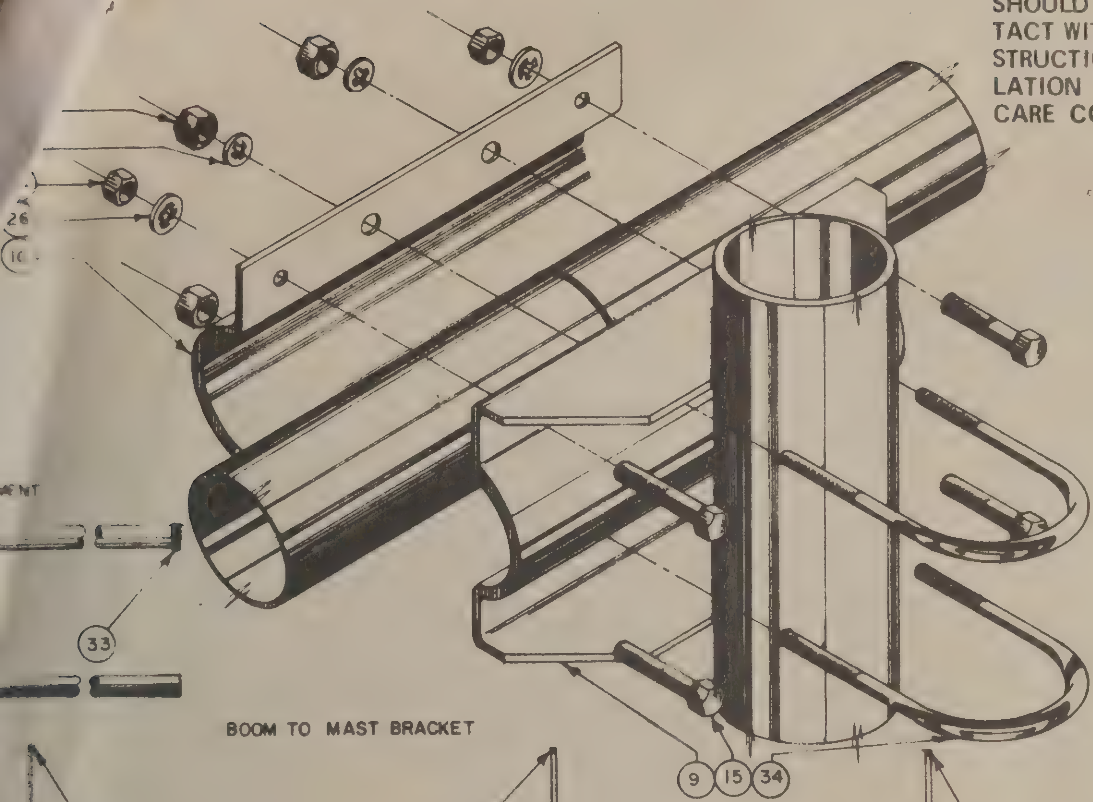
PLACE COMPRESSION CLAMP ON EDGE OF TUBING WITH SCREW HEAD 180° FROM SLOT.



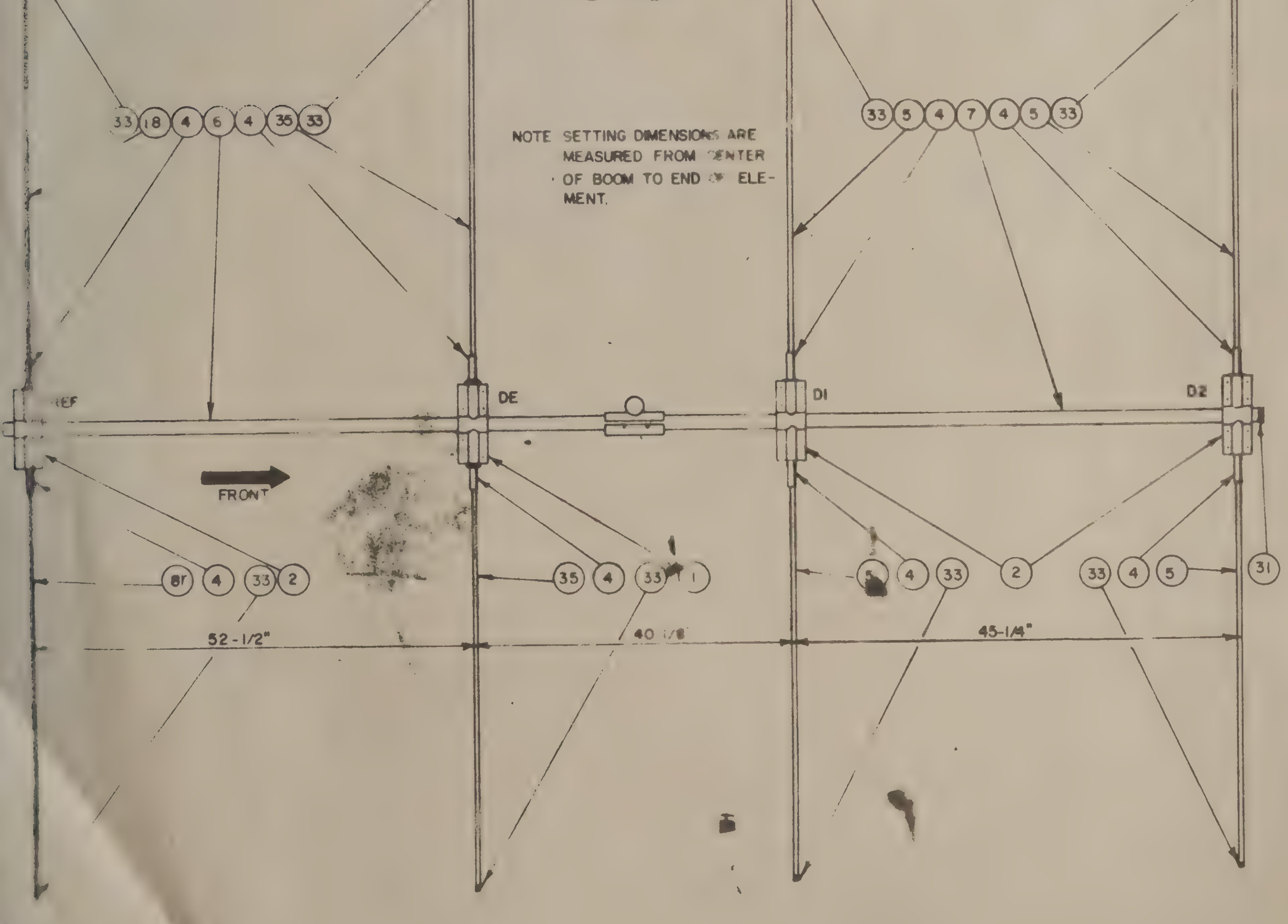

28
17 23 27
26 24 19 DE BRACKET
27 2 18 D1, D2, & REF BRACKETS
15
22
26
1
32
4
13
21
27
2
8
FEEDLINE
KEEP COAX AS CLOSE AS POSSIBLE TO BOOM

WARNING

WHEN INSTALLING YOUR SYSTEM, EXTREME CA
SHOULD BE TAKEN TO AVOID ACCIDENTAL CON
TACT WITH POWER LINES AND OTHER OVERHEAD O
STRUCTIONS BY ANY LADDER OR OTHER INSTA
LATION EQUIPMENT. FAILURE TO EXERCISE TH
CARE COULD RESULT IN SERIOUS INJURY.



BOOM TO MAST BRACKET



NOTE SETTING DIMENSIONS ARE MEASURED FROM CENTER OF BOOM TO END OF ELEMENT.

into each side of the bracket and tighten all screws securely. This includes the center anchor screw on both sides of the element to boom bracket.

( ) Place a 1/2'' compression clamp over the 5/8'' tubing. Slip the 7/16'' x 49'' tubing into the 5/8'' tubing. Refer to the chart for the correct setting and tighten the compression clamp using a 10-24 x 5/16'' screw.

( ) Select the Driven Element to Boom Bracket and install in the same manner. Slip the 5/8 x 7 1/2'' tubing into the D.E. insulators and slip the insulators into the bracket. Place a 1/2'' compression clamp over the 5/8'' tubing. Slip the 7/16 x 52'' tubing into the 5/8'' tubing. Refer to the chart for the correct setting and tighten the compression clamps securely.

( ) Assemble Directors 1 and 2 in the same manner as the reflector. Refer to the illustration and setting chart for the correct dimensions.

( ) Attach the beta match as shown in the illustration. Refer to the chart for the dimension desired.

( ) Slip the U-Bolts into the boom to mast bracket and install the antenna on a 1 5/8'' OD mast.

NOTE

For operation at power levels above 250 watts, construct a balun using RG-8/U coaxial cable.

Recheck all mechanical connections for tightness and seal with Dow–Corning silicon rubber, GERTV compound or some similiar substance.

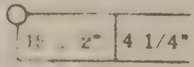
PARTS LIST
for
64B (230)

Item No.	Part No.	Description	Qty
1	165138	Driven element bracket	2
2	161422	Element to boom bracket	6
3	175637	Beta Tube, 7/16'' x 40''	1
4	190002	Tube, 5/8 x 7 1/2''	8
5	172929	Tube, 7/16 x 49''	4
6	175648	Boom #1, 1 1/4 x 68 1/4''	1
7	175649	Boom #2, 1 1/4 x 75 3/4''	1
8	172928	Reflector, 7/16 x 53''	2
9	385142	Boom to Mast Body	1
10	385144	Boom to Mast Clamp	1
11	871740	Balun Assembly	1
	871742	Parts Package	1
12	165123	Compression Clamp, 1/2''	8
13	505671	Screw, 10-24 x 5/16''	8
14	505646	Screw, 1/4-20 x 5/8''	1
15	506325	Screw, 1/4-20 x 3/4''	36
16	506382	Screw, 1/4-20 x 1/2''	5
17	506480	Screw, 10-24 x 5/8''	4
18	506529	Screw, 10-24 x 3/8''	6
19	548684	Screw, 1/4-20 x 1/2'' Tpr Pt.	1
20	551026	Nut, 5/16-18	[illegible]
21	555362	Nut, 10-24 Square	4
22	556960	Nut, 1/4-20 Hex	42
23	556970	Nut, 10-24 Hex	8
24	558685	Nut, 1/4-20 Square	1
25	567075	Lockwasher, 5/16'' Int.	4
26	567110	Lockwasher, 1/4'' Int	42
27	567125	Lockwasher, #10 Int.	8
	877832	Parts Package	1
28	162803	Clamp, 5/8''	4
29	165641	Clamp, 6 Meter	2
30	165643	Clamp, 6 Meter	1
31	455630	Caplug, 1 1/4''	2
32	461057	Insulator, 5/8 to 1 1/4''	2
33	475639	Caplug, 7/16''	8
34	545146	U-Bolt, 5/16''	2
35	174863	DE, 7/16 x 52''	2

SETTING #1 50-51 MC

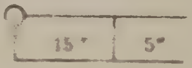
Beta Match

REF 59''
DE 56 3/4''
D1 55''
D2 54''



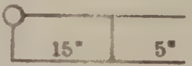
SETTING #2 52.5 MC

REF 56 3/4''
DE 54 1/2''
D1 52 7/8''
D2 51 7/8''



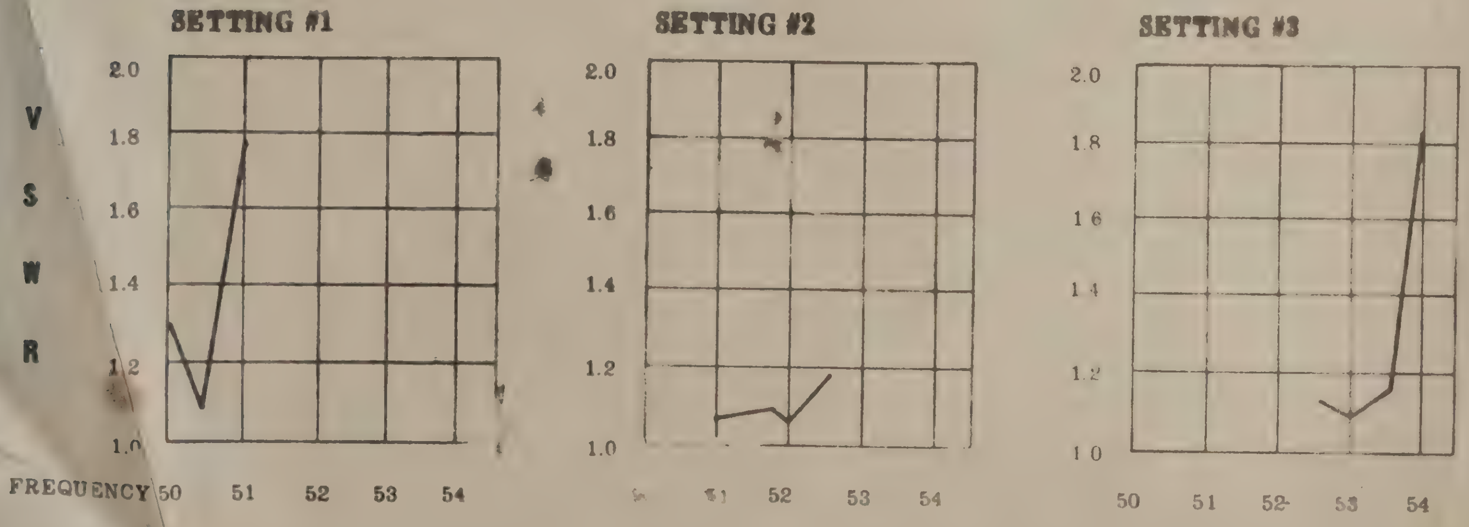
SETTING #3 52.5 - 54 MC

REF 55 1/2
DE 53 3/16''
D1 51 5/8''
D2 50 5/8''



Printed In USA

PN 805621



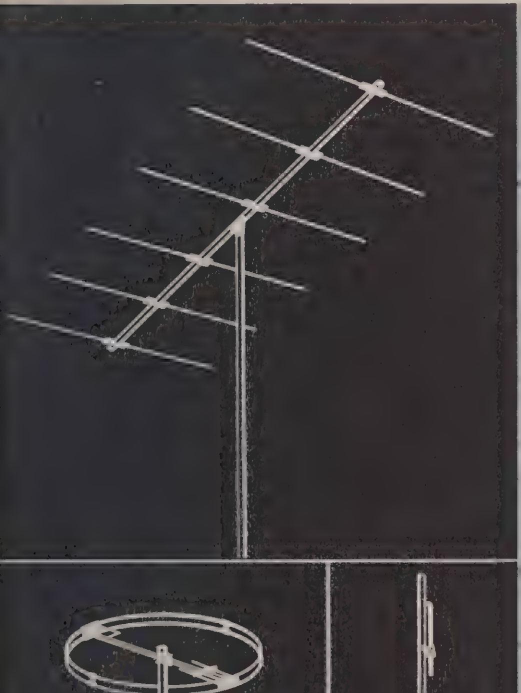
SATTERFIELD ELECTRONICS INC.
1900 S. Park St., Madison, Wis. AL 7-4801
1900 8th St., S Wis. Rapids, Wis HA 3-291[illegible]
109 W. Mullett St., Portage, Wis. RI 2-6454

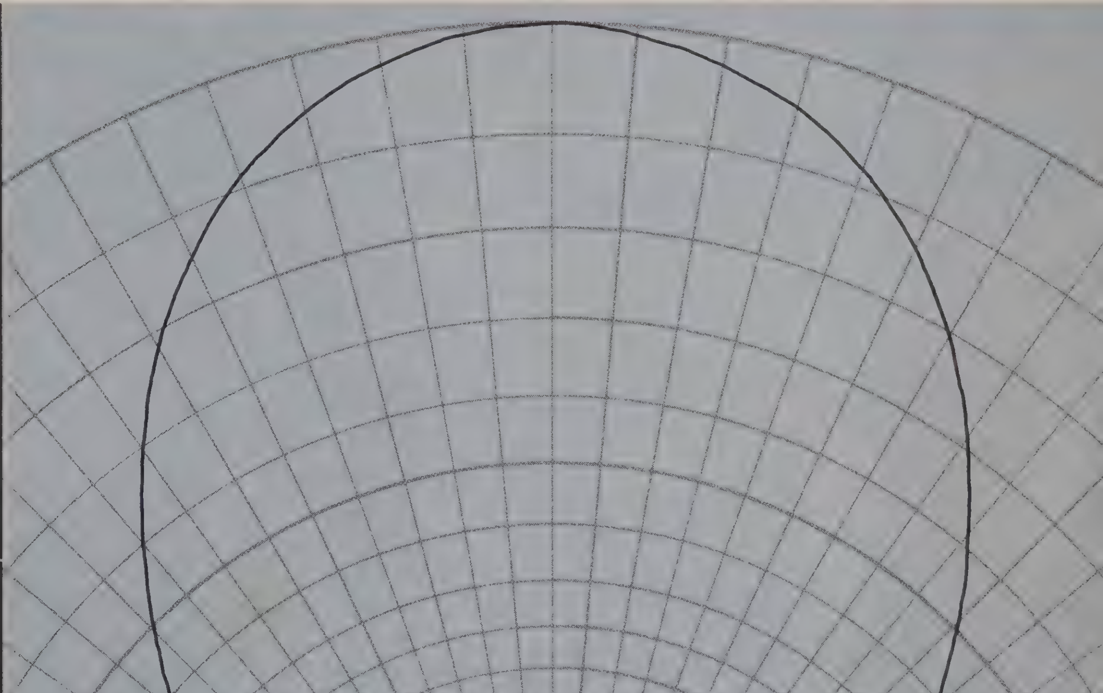
VHF

hy-gain

COMMUNICATIONS ANTENNAS FOR VHF AMATEUR BANDS

BASE STATION & MOBILE ANTENNAS FOR 6, 2, 1¼ & ¾ METERS





THE WORLD'S LARGEST MANUFACTURER OF COMMUNICATIONS ANTENNAS

HY-GAIN ANTENNA PRODUCTS CORPORATION

N.E. Highway 6 at Stevens Creek Lincoln, Nebr. 68501 Phone 434-6331 Area Code 402 TWX 402-591-1543

Maximum Performance Beams

Hy-Gain's completely new line of Maximum Performance Beams for 6 meters are the product of two years of extensive research, development and field testing...research, development and field testing that has resulted in Hy-Gain again proving significant, new antenna design theories which, when incorporated in 6 meter beams, makes them deliver heretofore unprecedented gain and performance. Features you'll find in every model of Hy-Gain's new 6 meter beams include:

Scientifically Staggered Optimum Spaced Elements

All Hy-Gain 6 meter beams feature a new concept in beam construction...one that results in actual delivered performance equalling Maximum Theoretical Gain. Hy-Gain engineers found that by scientifically staggering optimum spaced elements along the boom without regard to linearity and with sole reference to increased field strength intensity and pattern control, tremendous increases in gain could be attained. Exhaustive research and field testing dealing with element spacing and element length as related to optimum non-linear spacing of elements resulted in Hy-Gain bringing to you the ultimate in maximum performance 6 meter beams.

Exclusive Hy-Gain Beta Match

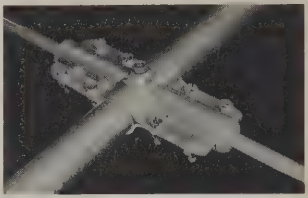
All Hy-Gain 6 meter beams feature a special VHF Beta Match configuration. The unique pre-tuned Beta Match permits maximum gain and F/B ratio with a nominal 50 ohm feedpoint impedance without detuning any of the parasitic elements. An optimum transfer of energy thus results without sacrifice in gain or pattern control.

Coaxial Balun

To assure perfect balance of currents to the driven element, all Hy-Gain 6 meter beams are supplied with a coaxial balun.

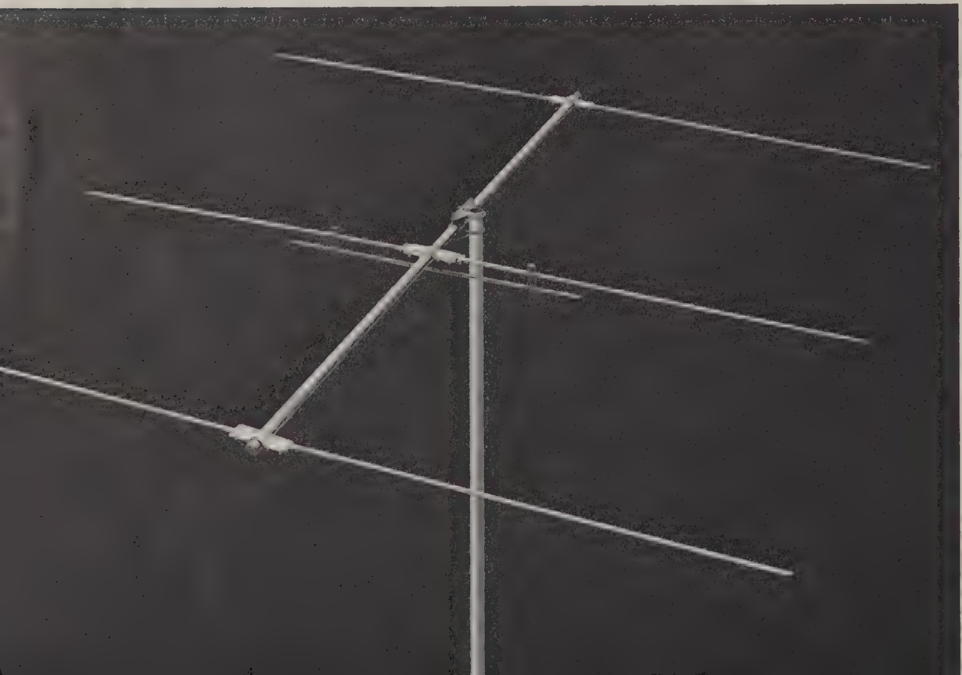
Mechanical Reliability

All Hy-Gain 6 meter beams are constructed of top quality, seamless aluminum tubing. Brackets are machine formed of heavy gauge aluminum. Insulators are precision molded of high impact styron for years of trouble-free service. All steel hardware is iridite treated to MIL specs and will resist rust and corrosion for much longer periods of time than will commercial grades of stainless steel. No structural details have been overlooked . . . Hy-Gain 6 meter beams are built to "take it."



Driven Element to Boom Bracket

Parasitic Element to Boom Bracket



Hy-Gain's 3-Element Model 63B

ELECTRICAL SPECIFICATIONS:

Gain	10db
Front-to-Back Ratio	20-25db
Maximum Power Input	1 KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms
Uni-directional Pattern	

MECHANICAL SPECIFICATIONS:

Longest Element	9′10″
Boom Length	8 ft.
Turning Radius	6 ft.
Net Weight	5 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1¼″ to 1⅝″ OD
Boom Diameter	1¼″ OD

$16.95 Ham Net

Hy-Gain's 4-Element Model 64B

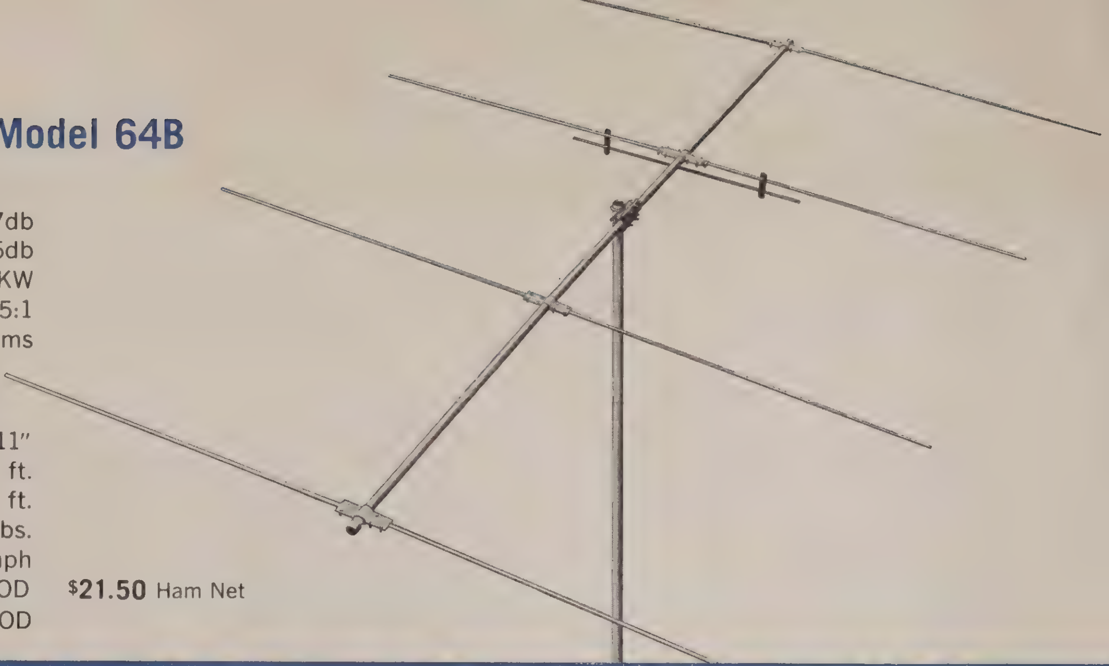
ELECTRICAL SPECIFICATIONS:

Gain	12.7db
Front-to-Back Ratio	20-25db
Maximum Power Input	1 KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms
Uni-directional pattern	

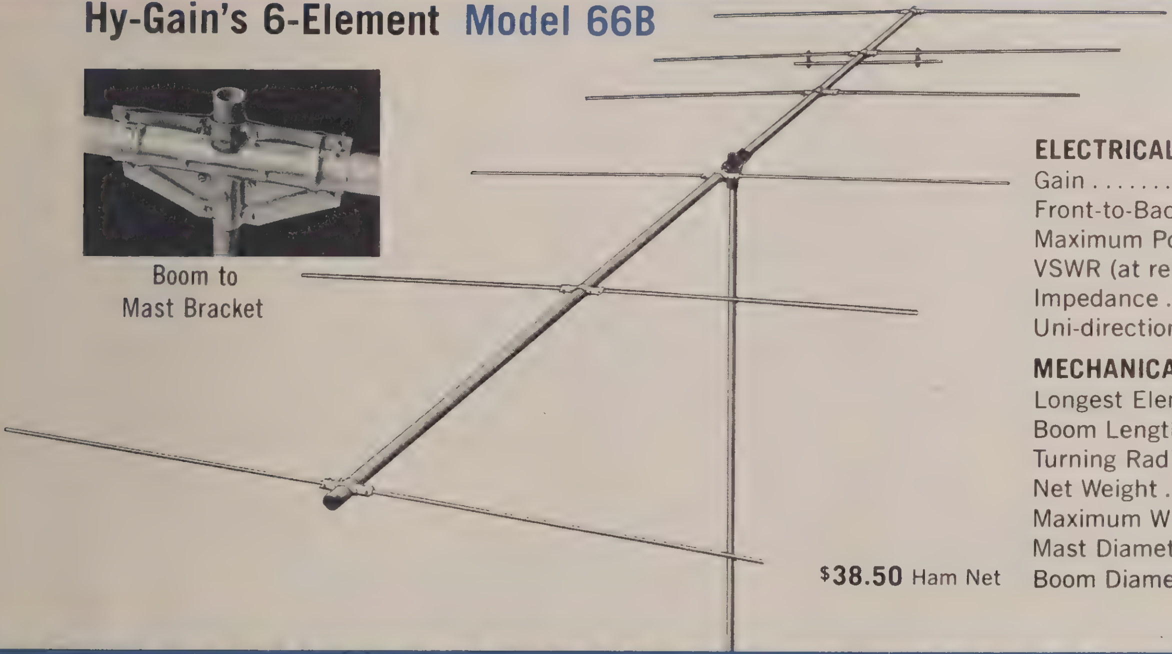
MECHANICAL SPECIFICATIONS:

Longest Element	9′11″
Boom Length	12 ft.
Turning Radius	8 ft.
Net Weight	8 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1¼″ to 1⅝″ OD
Boom Diameter	1¼″ OD

$21.50 Ham Net



Hy-Gain's 6-Element Model 66B



Boom to Mast Bracket

ELECTRICAL SPECIFICATIONS:

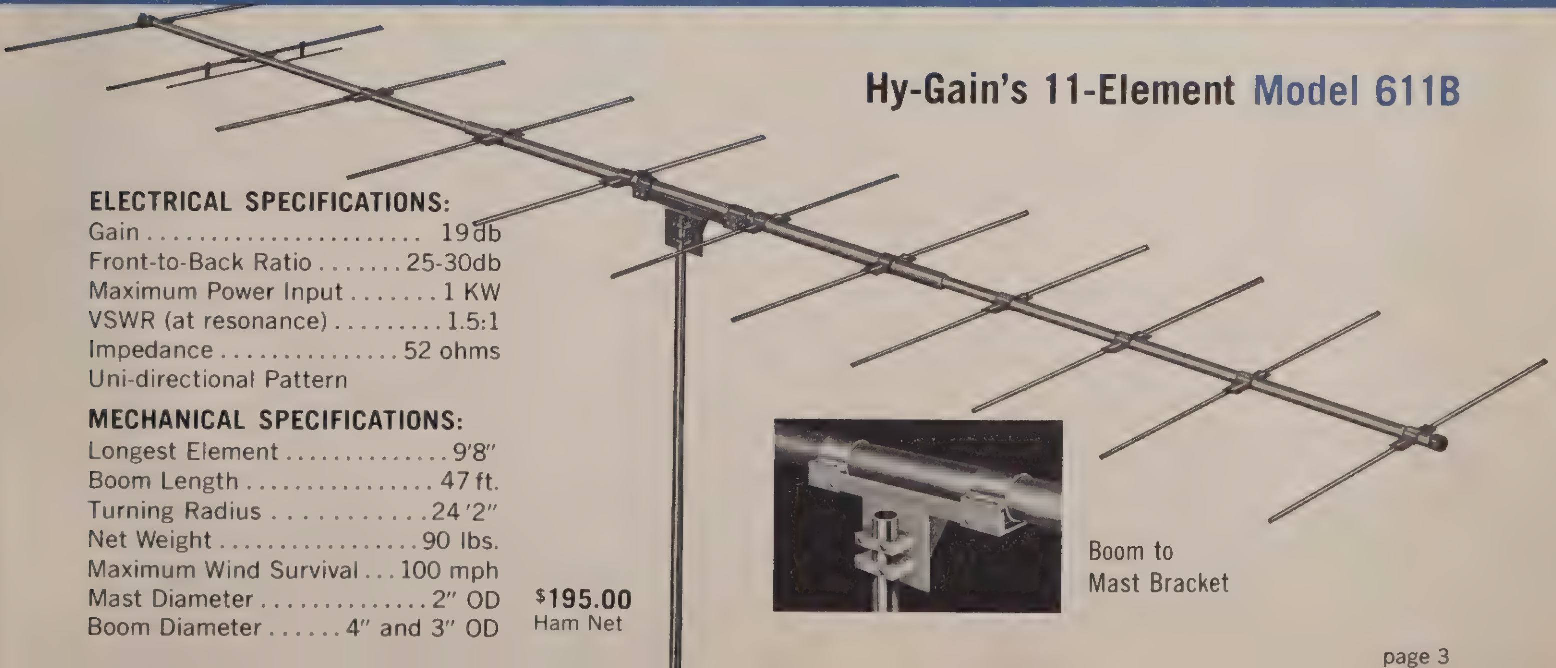
Gain	15db
Front-to-Back Ratio	20-25db
Maximum Power Input	1 KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms
Uni-directional Pattern	

MECHANICAL SPECIFICATIONS:

Longest Element	9′9″
Boom Length	24 ft.
Turning Radius	12′6″
Net Weight	17 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1⅝″ OD
Boom Diameter	1¼″ OD

$38.50 Ham Net

Hy-Gain's 11-Element Model 611B



Boom to Mast Bracket

ELECTRICAL SPECIFICATIONS:

Gain	19db
Front-to-Back Ratio	25-30db
Maximum Power Input	1 KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms
Uni-directional Pattern	

MECHANICAL SPECIFICATIONS:

Longest Element	9′8″
Boom Length	47 ft.
Turning Radius	24′2″
Net Weight	90 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	2″ OD
Boom Diameter	4″ and 3″ OD

$195.00 Ham Net

hy-gain BASE STATION ANTENNAS FOR 6 METERS

Omni-directional Base Station Antennas

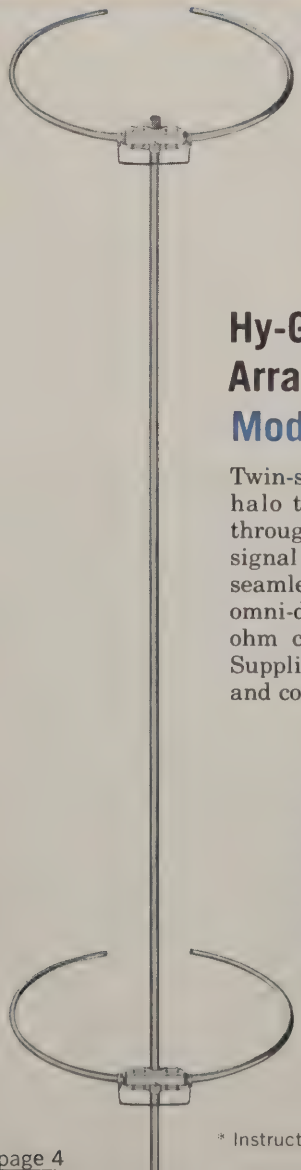
Hy-Gain's Full-Sized 6 Meter Base Station Halo Model HB6

Rugged, full-sized base station halo antenna constructed of hard drawn seamless aluminum tubing. Horizontally polarized to deliver outstanding omni-directional radiation pattern. Features unique Hy-Gain Beta Match and is factory pre-tuned for 52 ohm coaxial feedline. Easily installed and furnished with complete instructions for installation as a stacked phased array.

$12.95 Ham Net

SPECIFICATIONS:

Halo Diameter	34 in.
Tubing Diameter	⅞″
Maximum Wind Survival	100 mph
Net Weight	4 lbs.
Mast Diameter	1¼-1⅝ in.



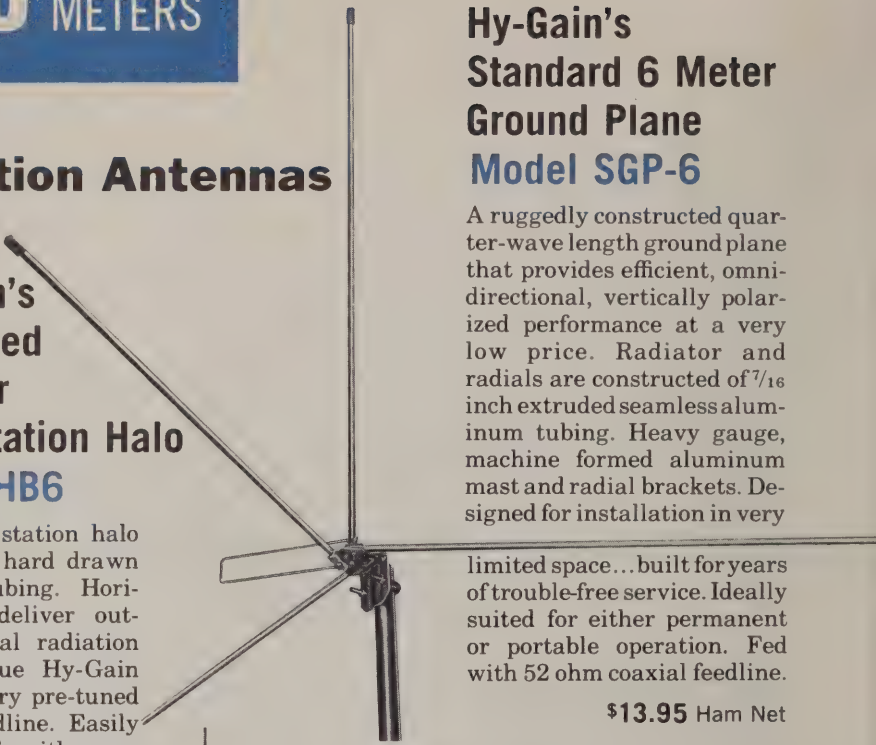
Hy-Gain's 2-Element Stacked Halo Array—Delivers 3.5db Gain Model HB6-S2

Twin-stacked, center mounted, full-sized base station halo that delivers 3.5db omni-directional gain through pattern compression and concentration of signal at the horizon. Constructed of hard drawn seamless aluminum tubing. Horizontally polarized omni-directional radiation pattern. Designed for 52 ohm coaxial feedline. High mechanical stability. Supplied complete with 2 six meters Halos, mast and coaxial phasing harness.

$36.50 Ham Net

SPECIFICATIONS:

Gain	3.5db
Power Limit	1 kw PEP; 250 watts AM*
Halo Diameters	39 in.
Tubing Diameter	⅞″
Maximum Wind Survival	100 mph
Net Weight	24 lbs.
Mast Diameter	2 in.
Accepts Mounting Mast	1¼-1⅝ in.



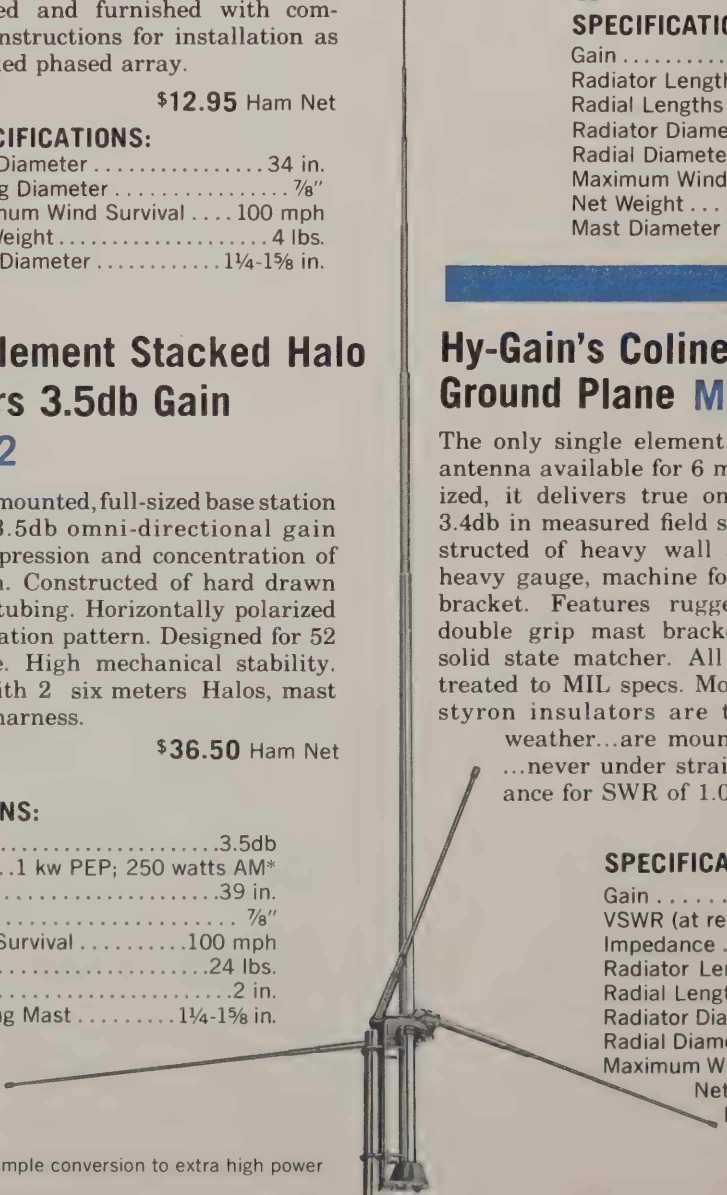
Hy-Gain's Standard 6 Meter Ground Plane Model SGP-6

A ruggedly constructed quarter-wave length ground plane that provides efficient, omni-directional, vertically polarized performance at a very low price. Radiator and radials are constructed of 7/16 inch extruded seamless aluminum tubing. Heavy gauge, machine formed aluminum mast and radial brackets. Designed for installation in very limited space...built for years of trouble-free service. Ideally suited for either permanent or portable operation. Fed with 52 ohm coaxial feedline.

$13.95 Ham Net

SPECIFICATIONS:

Gain	Unity
Radiator Length	4′7″
Radial Lengths	4′7″
Radiator Diameter	7/16 in.
Radial Diameter	7/16 in.
Maximum Wind Survival	100 mph
Net Weight	3 lbs.
Mast Diameter	1¼-1⅝ in.



Hy-Gain's Colinear Gain Ground Plane Model GPG-6

The only single element, omni-directional gain antenna available for 6 meters. Vertically polarized, it delivers true omni-directional gain of 3.4db in measured field strength intensity. Constructed of heavy wall seamless tubing using heavy gauge, machine formed aluminum radial bracket. Features rugged, 12″ heavy gauge, double grip mast bracket with moistureproof solid state matcher. All steel parts are iridite treated to MIL specs. Molded high impact polystyron insulators are totally impervious to weather...are mounted under compression ...never under strain. 50 ohm base impedance for SWR of 1.05:1 at resonance.

$24.95 Ham Net

SPECIFICATIONS:

Gain	3.4db
VSWR (at resonance)	1.05:1
Impedance	50 ohms
Radiator Length	11′ 7″
Radial Lengths	4′ 7″
Radiator Diameter	1¼-7/16 in.
Radial Diameter	⅝ to 7/16 in.
Maximum Wind Survival	100 mph
Net Weight	9 lbs.
Mast Diameter	1¼-1⅝ in.

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* Instructions supplied for simple conversion to extra high power

hy-gain BASE STATION ANTENNAS FOR 2 METERS

Maximum Performance Beams

Scientifically Staggered Optimum Spaced Elements

All Hy-Gain 2 meter beams feature a new concept in beam construction...one that results in actual delivered performance equalling Maximum Theoretical Gain.

Strategically staggered optimum spaced elements along the boom are referenced solely to increased field strength intensity and pattern control thus delivering tremendous increases in directional gain not attainable with close-spaced beams or optimum spaced beams using linearity as the sole reference.

Exclusive Hy-Gain Beta Match

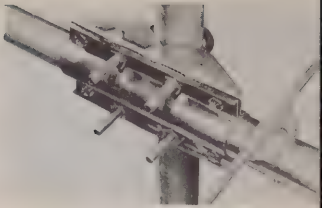
All Hy-Gain 2 meter beams feature a special VHF Beta Match configuration. The unique pretuned Beta Match permits maximum gain and F/B ratio with a nominal 50 ohm feedpoint impedance without detuning any of the parasitic elements. An optimum transfer of energy thus results without sacrifice in gain or pattern control.

Coaxial Balun

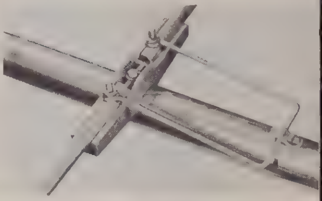
To assure perfect balance of currents to the driven element, all Hy-Gain 2 meter beams are supplied with a coaxial balun. All models are fed with 52 ohm coax.

Mechanical Reliability

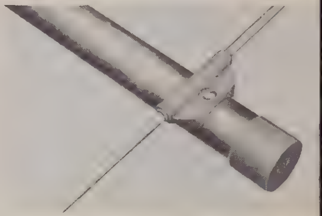
All Hy-Gain 2 meter beams feature booms constructed of heavy wall, aluminum tubing. The mast brackets are machine formed of heavy gauge steel. Elements are of ¼″ rod for maximum efficiency in the 2 meter frequency range. Element to boom fittings are injection molded of high impact styron...an exclusive Hy-Gain innovation. No structural details have been overlooked...Hy-Gain 2 meter beams are built to deliver the ultimate in performance and mechanical reliability.



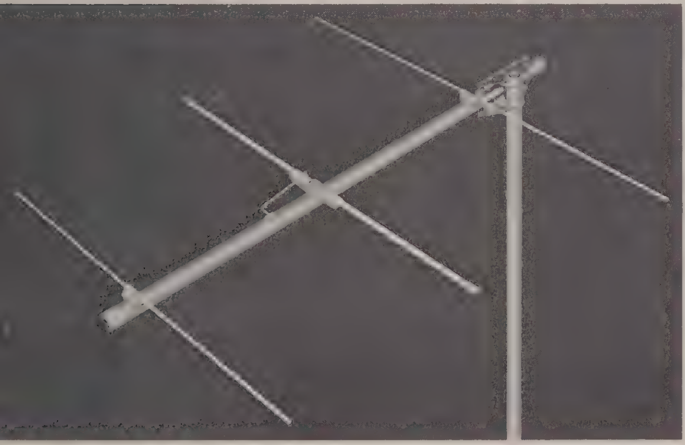
Boom to Mast Bracket



Driven Element to Boom Bracket



Parasitic Element to Boom Bracket



Hy-Gain's 3-Element Model 23

ELECTRICAL SPECIFICATIONS:

Gain	9db
Front-to-Back Ratio	20db
Maximum Power Input	1 KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms

Uni-directional Pattern

MECHANICAL SPECIFICATIONS:

Longest Element	3′6″
Boom Length	3′
Turning Radius	4′
Net Weight	3 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1¼″ to 1⅝″ OD
Boom Diameter	1¼″ OD

$6.95 Ham Net

Hy-Gain's 8-Element Model 28

ELECTRICAL SPECIFICATIONS:

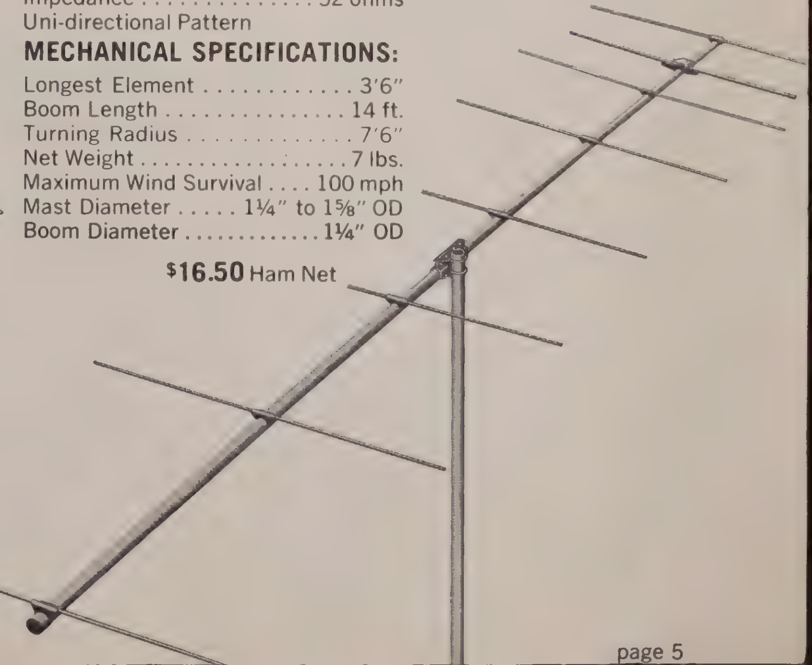
Gain	14.5db
Front-to-Back Ratio	25-30db
Maximum Power Input	1 KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms

Uni-directional Pattern

MECHANICAL SPECIFICATIONS:

Longest Element	3′6″
Boom Length	14 ft.
Turning Radius	7′6″
Net Weight	7 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1¼″ to 1⅝″ OD
Boom Diameter	1¼″ OD

$16.50 Ham Net

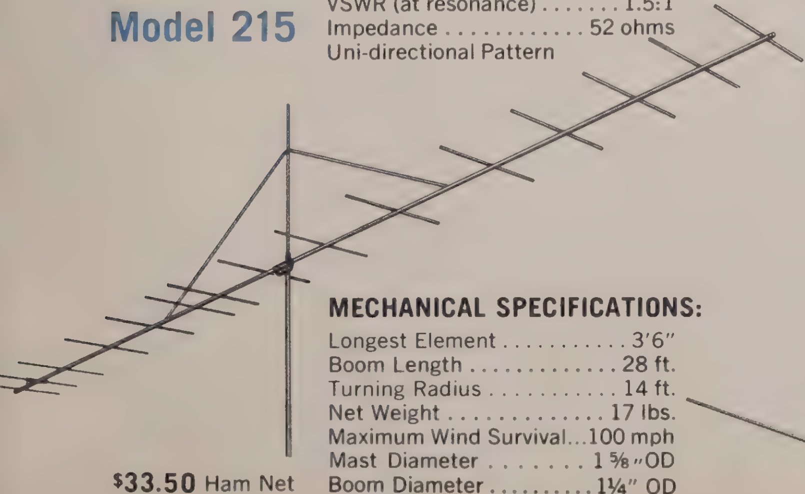


Hy-Gain's 15-Element Model 215

ELECTRICAL SPECIFICATIONS:

Gain	17.8db
Front-to-Back Ratio	25-30db
Maximum Power Input	1 KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms

Uni-directional Pattern



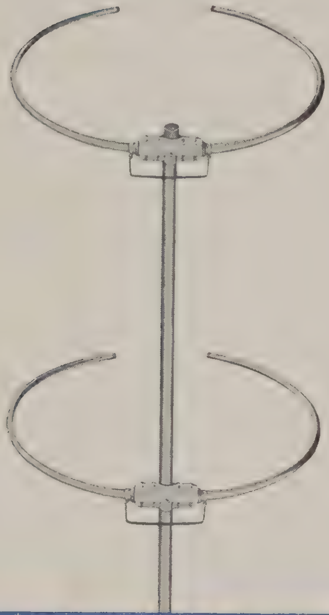
MECHANICAL SPECIFICATIONS:

Longest Element	3′6″
Boom Length	28 ft.
Turning Radius	14 ft.
Net Weight	17 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1⅝″ OD
Boom Diameter	1¼″ OD

$33.50 Ham Net

hy-gain BASE STATION ANTENNAS FOR 2 METERS

Omni-directional Base Station Antennas

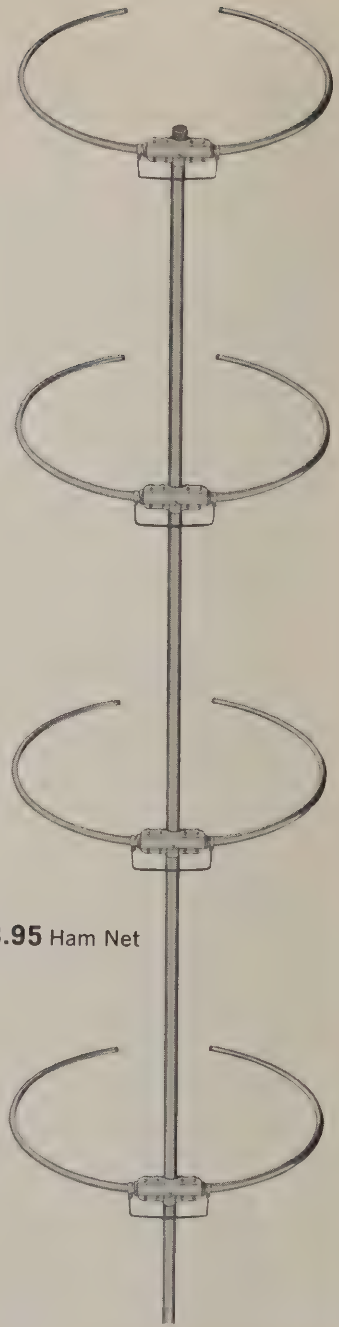


Hy-Gain's 2-Element Stacked Halo Array Delivers 3.4db Gain Model HB2-S2

Twin-stacked, center mounted, 2 meter base station halo that delivers 3.4db omni-directional gain through pattern compression and concentration of signal at the horizon. Constructed of hard drawn seamless aluminum tubing. Horizontally polarized for omni-directional radiation pattern. Designed for 52 ohm coaxial feedline. Top quality construction throughout. Supplied complete with halos, mast and coaxial phasing harness. May be side-mounted at the base or mounted on a roof saddle. **$24.95** Ham Net

MECHANICAL SPECIFICATIONS:

Gain 3.4db
Power Limit . . 1 kw PEP; 250 watts AM*
Halo Diameters . . . . 14 in.
Mast Length . . . . 8 ft.
Maximum Wind Survival . . . . 100 mph
Net Weight . . . . 8 lbs.
Mast Diameter . . . . 2 in.
Accepts Mounting Mast . . . . 1¼ - 1⅝ in.



Hy-Gain's 4-Element Stacked Halo Array Delivers 6.3db Gain Model HB2-S4

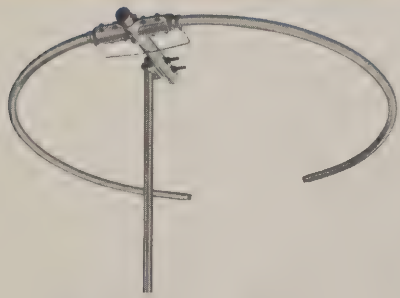
Quad stacked, 2 meter base station halo that delivers 6.3db omni-directional gain through pattern compression and concentration of signal at the horizon. Designed for 52 ohm coax...completely factory pre-tuned with no further adjustments required. Horizontally polarized for omni-directional radiation pattern. Constructed of hard drawn seamless aluminum tubing. Top quality construction throughout. Supplied complete with halos, mast and coaxial phasing harness. May be side-mounted at the base or mounted on a roof saddle.

$53.95 Ham Net

MECHANICAL SPECIFICATIONS:

Gain 6.3db
Power Limit . . 1 kw PEP; 250 watts AM*
Halo Diameters . . . . 14 in.
Mast Length . . . . 16 ft.
Maximum Wind Survival . . . . . . 100 mph
Net Weight . . . . 10 lbs.
Mast Diameter . . . . 2 in.
Accepts Mounting Mast . . . . . . 1¼-1⅝ in.

* Instructions supplied for simple conversion to extra high power



Hy-Gain's 2 Meter Base Station Halo Model HB2

Rugged horizontally polarized halo of hard drawn seamless aluminum tubing delivers outstanding omni-directional radiation pattern. Features unique Beta Match—is factory pre-tuned for 52 ohm coax. Easily installed. Furnished with instructions for installation as a stacked phased array.

$5.95 Ham Net

SPECIFICATIONS:

Halo Diameter . . . . 14 in.
Tubing Diameter . . . . 7/16 in.
Maximum Wind Survival . . 100 mph
Net Weight . . . . 6 oz.
Mast Diameter . . . . 1¼-1⅝ in.

Hy-Gain's Colinear Gain Ground Plane Model GPG-2

The only single element, omni-directional gain antenna available for 2 meters. Vertically polarized, it delivers true omni-directional gain of 3.4db in measured field strength intensity. Vertical radiator is of seamless, aluminum tubing. Radials are ¼" solid aluminum rod. Features rugged, double grip mast bracket with moistureproof solid state matcher. Molded high impact polystyron insulator is totally impervious to weather. All steel parts are iridite treated to MIL specs. Designed for 52 ohm coaxial feedline.

$14.95 Ham Net

MECHANICAL SPECIFICATIONS:

Radiator Length . . . . 4 ft.
Radial Lengths . . . . 19 in.
Radiator Diameter . . . . . . 7/16 in.
Radial Diameter . . . . ¼ in.
Net Weight . . . . 2 lbs.
Maximum Wind Survival...100 mph
Mast Diameter . . . . 1" to 1⅝" O.D.

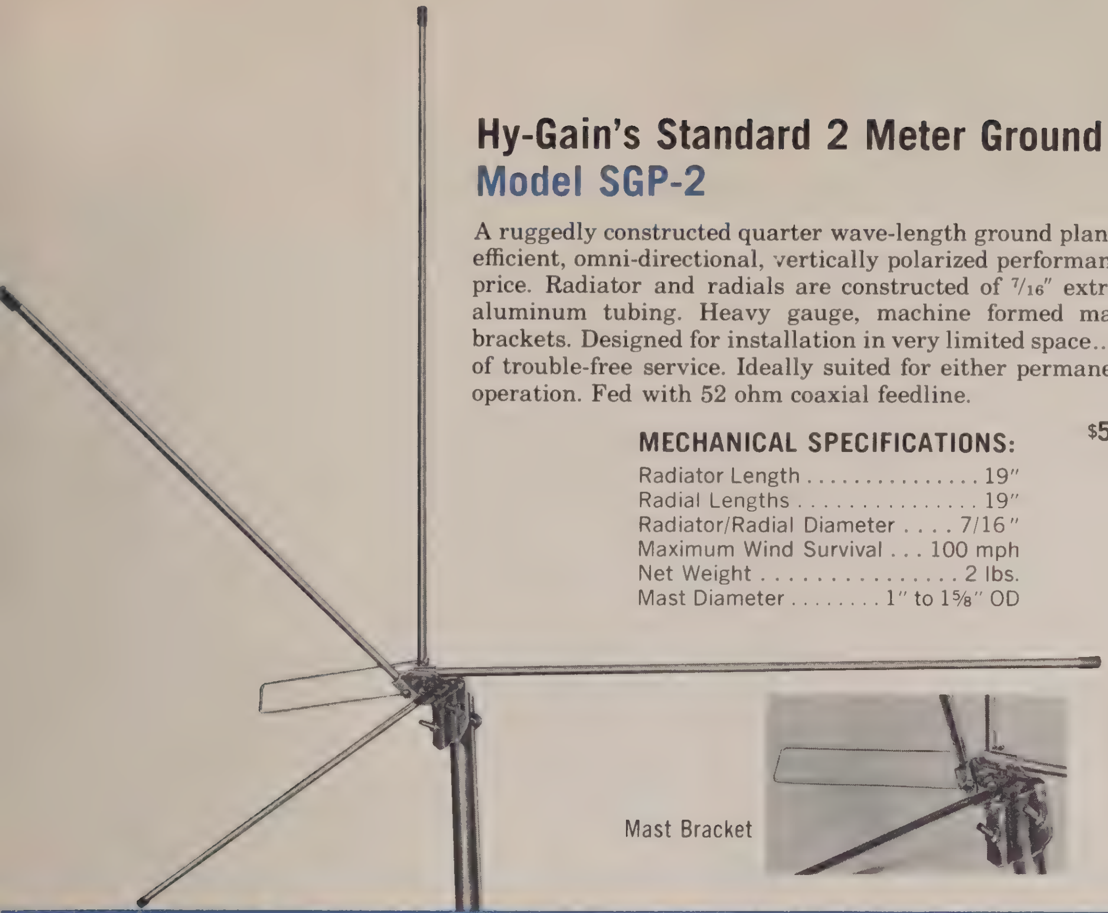
Hy-Gain's Standard 2 Meter Ground Plane
Model SGP-2

A ruggedly constructed quarter wave-length ground plane that provides efficient, omni-directional, vertically polarized performance at a modest price. Radiator and radials are constructed of 7/16" extruded seamless aluminum tubing. Heavy gauge, machine formed mast and radial brackets. Designed for installation in very limited space...built for years of trouble-free service. Ideally suited for either permanent or portable operation. Fed with 52 ohm coaxial feedline.

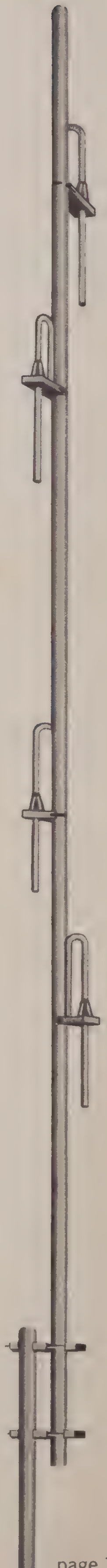
$5.90 Ham Net

MECHANICAL SPECIFICATIONS:

Radiator Length	19"
Radial Lengths	19"
Radiator/Radial Diameter	7/16"
Maximum Wind Survival	100 mph
Net Weight	2 lbs.
Mast Diameter	1" to 1⅝" OD



Mast Bracket



STACKED JAY-POLE GAIN ANTENNAS

Hy-Gain's 2-Element Stacked Jay-Pole—Delivers 3.4db Gain

An all driven stacked array of vertical dipoles that are vertically polarized and deliver 3.4db of omni-directional gain. The driven element maintains an extremely broad band response and effective isolation from the supporting mast. Uniquely designed phasing and matching harness maintains a perfect parallel phase relationship and is center fed to minimize beam tilting for better low angle radiation. Entire antenna is at DC ground for lightning protection. Open construction minimizes failure due to moisture and condensation. All steel hardware is iridite treated to MIL specs. Fed with 52 ohm coaxial feedline.

Model SJ2S2 **$29.95** Ham Net

ELECTRICAL SPECIFICATIONS:

Gain	3.4db
Power Limit	1 kw PEP; 250 watts AM*
VSWR (at resonance)	1.2:1
Impedance	50 ohms
Omni-directional Pattern	

MECHANICAL SPECIFICATIONS:

Mast Height	11 ft.
Insulators	High Impact Styron
Net Weight	10 lbs.
Mast Diameter	2 in.
Accepts Mounting Mast	1¼-1⅝"

Hy-Gain's 4-Element Stacked Jay-Pole—Delivers 6.2db Gain

An all driven stacked array of dipoles that are vertically polarized and deliver 6.2db of omni-directional gain. Uniquely designed phasing and matching harness maintains a perfect parallel phase relationship and is center fed to minimize beam tilting for better low angle radiation. The driven element maintains an extremely broad band response and effective isolation from the supporting mast. Open construction minimizes failure due to moisture and condensation. Entire antenna is at DC ground for lightning protection. Fed with 52 ohm coaxial feedline. May be side-mounted on mast or mounted on a roof saddle.

Model SJ2S4 **$54.95** Ham Net

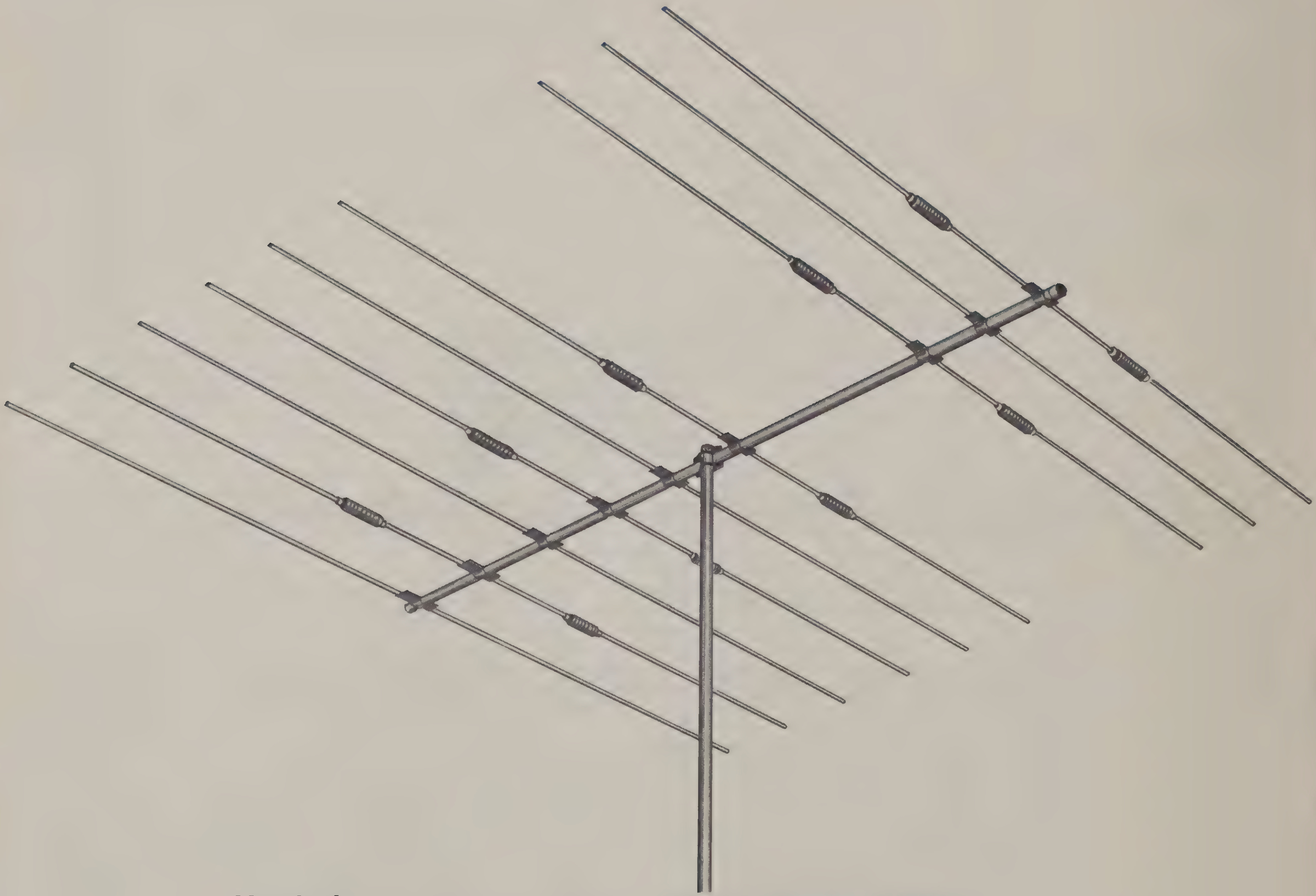
ELECTRICAL SPECIFICATIONS:

Gain	6.2db
Power Limit	1 kw PEP; 250 watts AM*
VSWR (at resonance)	1.2:1
Impedance	50 ohms
Omni-directional Pattern	

MECHANICAL SPECIFICATIONS:

Mast Height	21 ft.
Insulators	High Impact Styron
Net Weight	20 lbs.
Mast Diameter	2 in.
Accepts Mounting Mast	1¼-1⅝"

* Instructions supplied for simple conversion to extra high power



Hy-Gain's 6 and 2 Meter Beam Model DB62

A single transmission line beam for 6 and 2 meter operation...4 elements on 6 meters...18 elements on 2 meters. Develops forward gain of 8 db on 6 meters and 15db on 2 meters. Boom is constructed of heavy gauge 1¼" OD seamless aluminum tubing. Elements are of hard drawn aluminum tubing. Heavy gauge, machine formed boom to mast bracket. Insulators are of molded high impact polystyron for maximum weatherability. Truly delivers outstanding performance on both 6 and 2 meters while offering maximum mechanical reliability. Fed with 52 ohm coaxial feedline.

$32.95 Ham Net

ELECTRICAL SPECIFICATIONS:

Gain (6 meters)	8db
Gain (2 meters)	15db
Front-to-Back Ratio	15-20db
Maximum Power Input	1KW
VSWR (at resonance)	1.5:1
Impedance	52 ohms
Uni-directional Pattern	

MECHANICAL SPECIFICATIONS:

Longest Element	10 ft.
Boom Length	10 ft.
Turning Radius	7 ft.
Net Weight	6 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1⅝" OD

Hy-Gain's 6 and 2 Meter Log Periodic Model LP-62

The ultimate in a duo-band, uni-directional antenna for 6 and 2 meter operation. Delivers 8db gain on 6 meters...15db gain on 2 meters and maintains these rated gain figures across the entire 2 meter and 6 meter bands. Unique Hy-Gain skip band log periodic design insures highly efficient operation across the entire 6 meter band and the entire 2 meter band with SWR less than 2:1. Double boom and all elements are constructed of heavy gauge seamless aluminum tubing. Insulators are molded of high impact polystyron...totally impervious to weather. This all driven array is supplied complete with all phasing lines and is designed to be fed with 52 ohm coaxial feedline. Built for years of trouble-free service...absolutely the finest duo-band directional antenna you can buy.

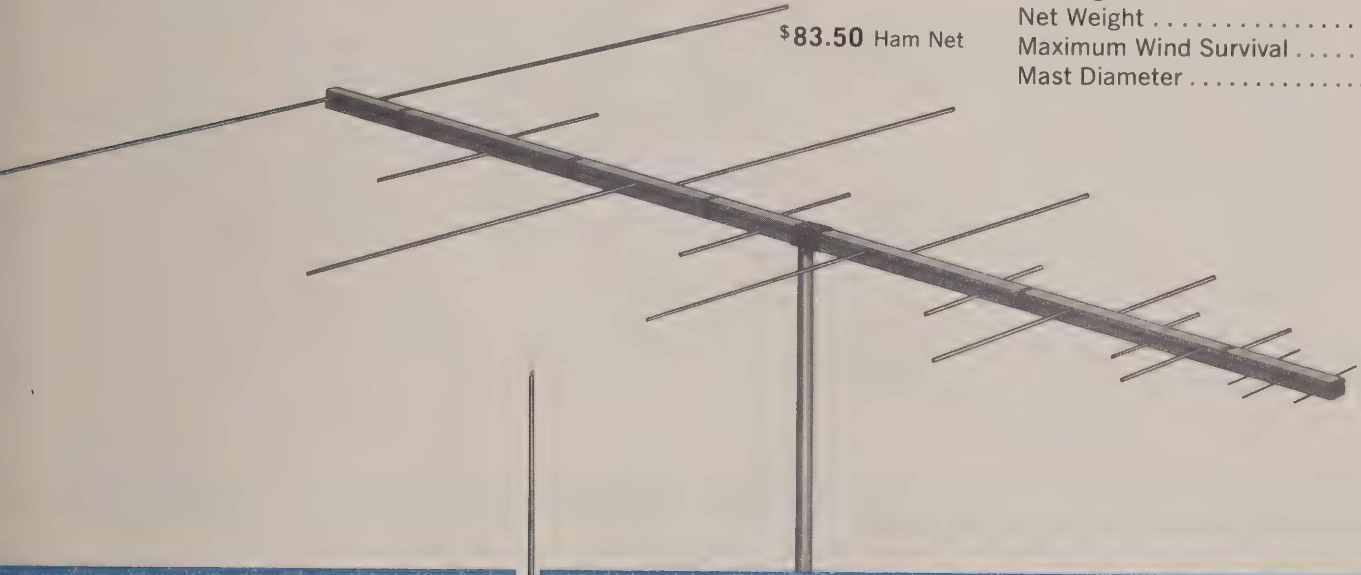
$83.50 Ham Net

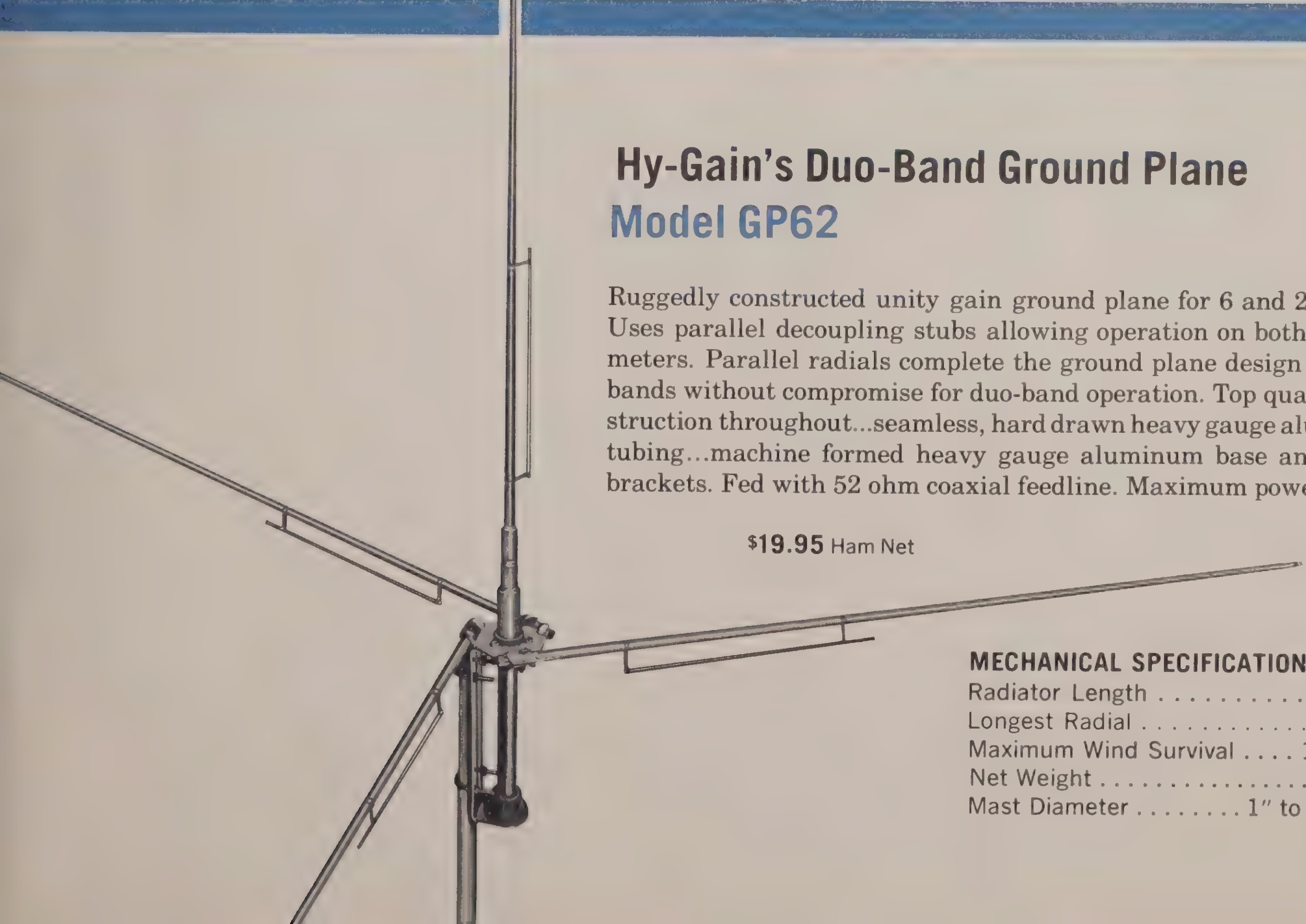
ELECTRICAL SPECIFICATIONS:

Gain (6 meters)	8db
Gain (2 meters)	15db
Front-to-Back Ratio	25db
Maximum Power Input	1 KW
VSWR	less than 2:1
Impedance	52 ohms
Uni-directional Pattern	

MECHANICAL SPECIFICATIONS:

Longest Element	9 ft.
Boom Length	24 ft.
Turning Radius	16 ft.
Net Weight	20 lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1⅝″ OD





Hy-Gain's Duo-Band Ground Plane Model GP62

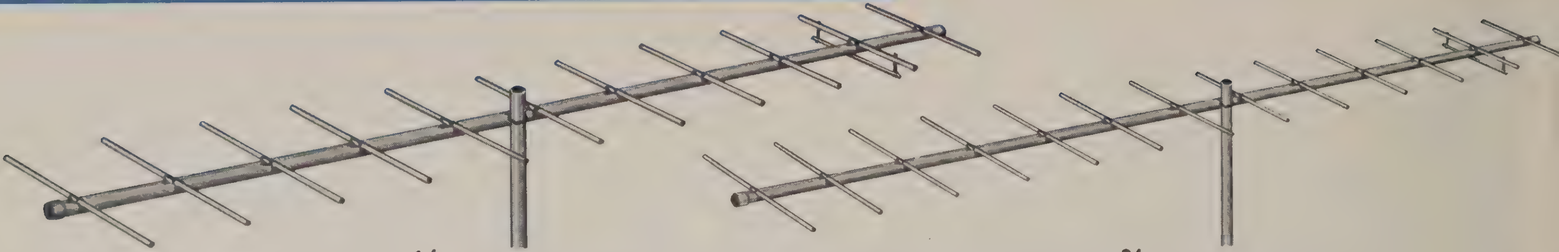
Ruggedly constructed unity gain ground plane for 6 and 2 meters. Uses parallel decoupling stubs allowing operation on both 6 and 2 meters. Parallel radials complete the ground plane design for both bands without compromise for duo-band operation. Top quality construction throughout...seamless, hard drawn heavy gauge aluminum tubing...machine formed heavy gauge aluminum base and radial brackets. Fed with 52 ohm coaxial feedline. Maximum power, 1 kw.

$19.95 Ham Net

MECHANICAL SPECIFICATIONS:

Radiator Length	4′ 7″
Longest Radial	4′ 7″
Maximum Wind Survival	100 mph
Net Weight	4 lbs.
Mast Diameter	1″ to 1⅝″ OD

hy-gain HI-BANDER BEAMS FOR 1¼ and ¾ METERS



Hy-Gain's 11-Element 1¼ Meter Beam Delivers 14.2db Gain Model 111

A rugged, high performance beam that has proven itself time and again in challenging amateur projects on the 1¼ meter band. Features optimum spaced elements constructed of advanced design high Q solid rod which results in tremendous forward gain and excellent front-to-back characteristics. Uses pre-tuned advanced design folded ratio dipole specifically designed for low loss 450 ohm open wire transmission lines. (Open wire low loss lines are a must for minimizing feedline losses at these frequencies). High Q solid rod elements are insulated from and firmly attached to the heavy gauge aluminum boom with Hy-Gain's exclusive high impact molded cycolac brackets. Boom ends are plastic capped and all hardware is iridite treated to MIL specs for maximum weatherability.

$13.95 Ham Net

ELECTRICAL SPECIFICATIONS:	
Gain	14.2db
Front-to-Back Ratio	25db
Maximum Power Input	1 KW
VSWR (at resonance)	1.2:1
Impedance	450 ohms
Uni-Directional Pattern	

MECHANICAL SPECIFICATIONS:	
Longest Element	27 in.
Boom Length	12 ft.
Turning Radius	6′ 8″
Net Weight	3¾ lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1⅝ in.
Boom Diameter	1¼″ OD

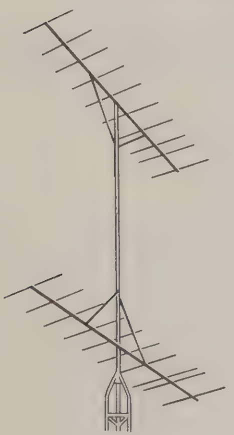
Hy-Gain's 13-Element ¾ Meter Beam Delivers 16.1db Gain Model 313

One of the highest gain (16.1db) and most efficient extended multi-element Yagis ever manufactured commercially for amateur communications. Features optimum spaced elements constructed of advanced design high Q solid rod which results in tremendous forward gain and excellent front-to-back characteristics. High Q solid rod elements are insulated from and firmly attached to the heavy gauge aluminum boom with Hy-Gain's exclusive high impact molded cycolac brackets. Boom ends are plastic capped and all hardware is iridite treated to MIL specs for lasting durability.

$12.95 Ham Net

ELECTRICAL SPECIFICATIONS:	
Gain	16.1db
Front-to-Back Ratio	25db
Maximum Power Input	1 KW
VSWR (at resonance)	1.2:1
Impedance	450 ohms
Uni-Directional Pattern	

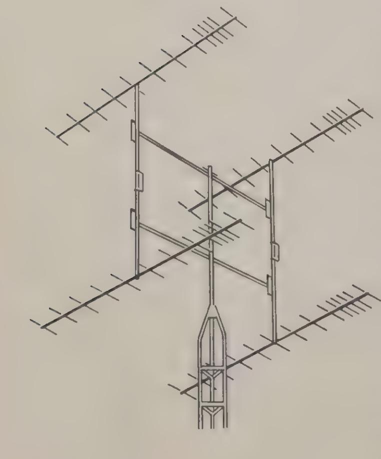
MECHANICAL SPECIFICATIONS:	
Longest Element	13¾ in.
Boom Length	8 ft.
Turning Radius	4′6″
Net Weight	2¼ lbs.
Maximum Wind Survival	100 mph
Mast Diameter	1⅝ in.
Boom Diameter	1¼″ OD



Hy-Gain's Dual Stacking Kits for 3db Additional Gain

Two Hy-Gain VHF Beams for 2, 1¼ and ¾ meters may be stacked to produce an additional 3db of gain...equal to doubling the power. Stacking results in considerably reducing the vertical beam width thus concentrating maximum power at low vertical angles vitally important in VHF propagation. Stacking kits are complete and include all necessary hardware along with assembly instructions (less mast). Order Model S stacking kit and specify antenna model number.

Model S $4.95 Ham Net



Hy-Gain's Quad Stacking Kits and Frames for 6db Additional Gain

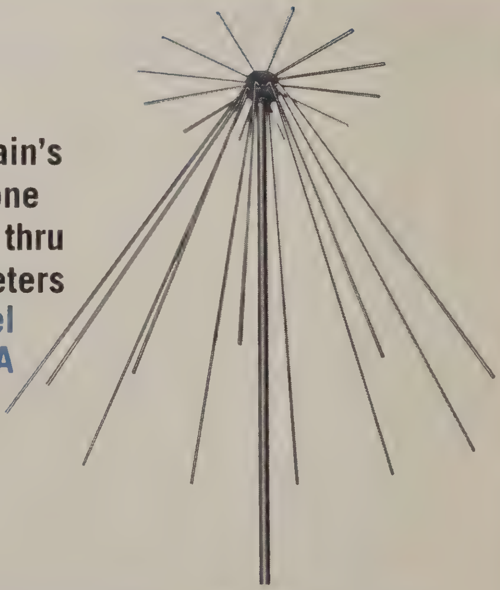
Stacking four (two by two) Hy-Gain 2, 1¼ and ¾ meter Beams results in attaining tremendous additional gain of 6db (equal to four times power). Quad stacking delivers maximum concentration of radio frequency energy within the mechanical limitations of most amateur installations. Quad stacking kits are complete including all hardware and assembly instructions (less mast and mounting frame). Order Model QS stacking kit by antenna model number.

Model QS $15.95 Ham Net

Quad stacking frames constructed of extra heavy gauge steel and heat treated alloy aluminum tubing mount in proper relationship with 4 Hy-Gain VHF Beams for 2, 1¼ and ¾ meters and will withstand heavy ice loading and high wind velocities. They are especially designed with positive grip tubing matching brackets that are iridite treated for maximum weatherability. Order Model SF stacking frames by antenna model number.

Model SF $49.50 Ham Net

Hy-Gain's Discone for 6 thru ¾ Meters Model DS-1A

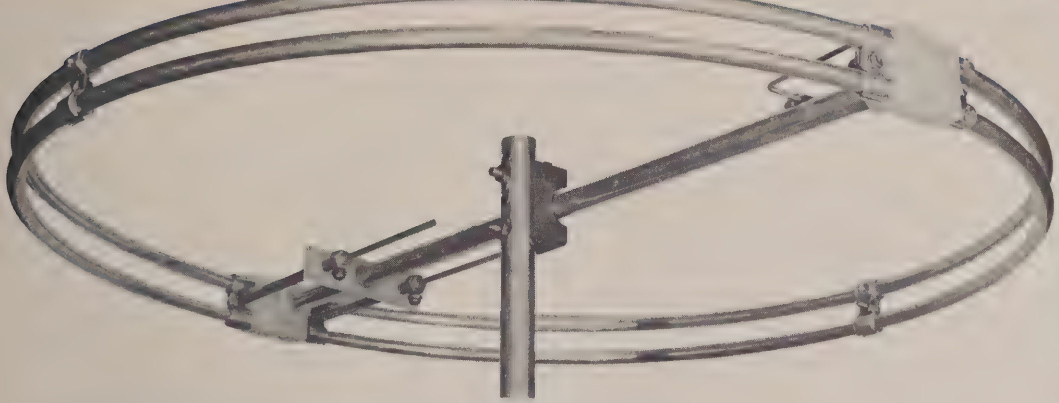


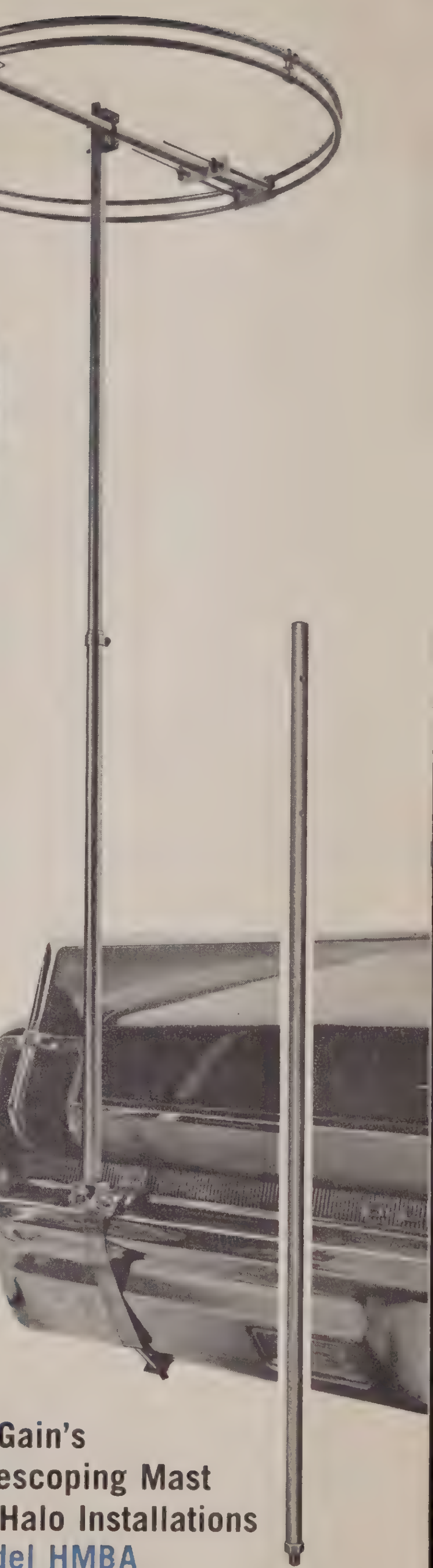
A vertically polarized, omni-directional broad band antenna for 50 through 500 megacycle operation. Provides low angle radiation on all bands without adjustment. Constructed of seamless aluminum tubing with hardware that is iridite treated to MIL specs.

$39.95 Ham Net

SPECIFICATIONS:	
Gain	Unity
Impedance	50 ohms
VSWR	1.5:1
Overall Height	63 in.
Net Weight	9 lbs.
Mast Diameter	1⅝ in.

hy-gain MOBILE ANTENNAS FOR 6 METERS





Hy-Gain's Center Mount Halo Model HH6BA

Rugged center mount design concept insures highest possible degree of mechanical reliability while eliminating pattern distortion generally prevalent with off-center mount halos. Delivers a perfect omni-directional pattern and improved impedance control making it the most efficient mobile halo available. Constructed of heavy gauge seamless aluminum tubing with high impact, injection molded styron insulators. Heavy gauge, machine formed mounting hardware. Supplied with tuning rods for precise adjustment to frequency. Features exclusive Hy-Gain Beta Match to insure optimum transfer of energy.

$10.95 Ham Net

Hy-Gain's Center Mount Mobile Halo Mast and Bumper Mount Kit Model HH6BK

Rugged Hy-Gain Model HH6BA Halo with heavy wall aluminum telescoping mast (Model HMBA) and Model BPRS stainless steel strap bumper mount with cadmium plated hardware. Comes complete with everything needed for quick installation on any car.

$16.50 Ham Net

Hy-Gain's Stainless Steel ¼ Wave Whip Model W60

Quality, taper ground, ¼ wave Stainless Steel Whip. Constructed 17-7 PH stainless steel for extra long life. 60″ whip terminates into ⅜″ x 24 thread stud to fit standard body mount or spring.

$6.00 Ham Net

Hy-Gain's Body Mount ¼ Wave Whip Model MW6

Top quality quarter-wave length unity gain whip constructed of taper ground stainless steel. Supplied complete with heavily chrome plated single hole body mount which permits installation at any number of places high on the vehicle for outstanding radiation efficiency. Commercial quality throughout. Comes complete—ready to install.

$10.95 Ham Net

SPECIFICATIONS:

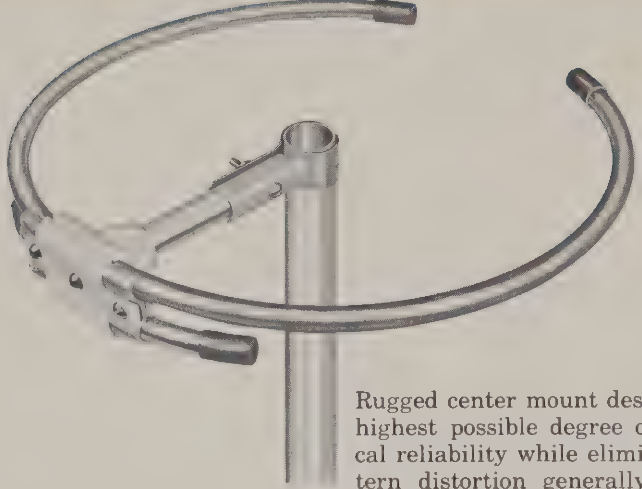
Maximum Power	250 watts
Nominal Impedance	50 ohms
VSWR (at resonance)	1.1:1
Mounting Hole Diameter	½ in.
Radiator Length	60 in.

Hy-Gain's Telescoping Mast for Halo Installations Model HMBA

Constructed of heavy wall, top quality aluminum tubing. Terminates at base with standard ⅜″x24 thread stud for installation on any standard mount. Provision is made at the top of the mast for quick installation of Model HH6BA, 6 meter halo. Provision is also made for installation of a Hy-Gain Model HH2BA, 2 meter halo for duo-band operation.

$5.95 Ham Net

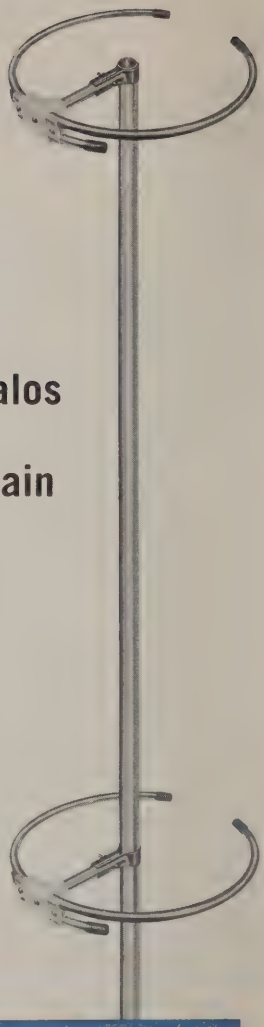
hy-gain MOBILE ANTENNAS FOR 2 METERS



Hy-Gain's Center Mount Halo Model HH2BA

Rugged center mount design insures highest possible degree of mechanical reliability while eliminating pattern distortion generally prevalent with off-center mount halos. Delivers a perfect omni-directional pattern and improved impedance control making it the most efficient mobile halo available. Features exclusive Hy-Gain Beta Match to insure optimum transfer of energy. Constructed of heavy gauge seamless aluminum tubing with high impact, injection molded styron insulators. Heavy gauge, machine formed mounting hardware. Ready for mounting on mobile mast (use with Hy-Gain Model HMBA mobile mast).

$5.95 Ham Net



Hy-Gain's Stacked Mobile Halos Deliver 3.4db Omni-directional Gain

Two Model HH2BA halos may be conveniently stacked on a Hy-Gain Model HMBA mast to attain 3.4db gain. This 2-element, all driven array efficiently compresses the radiation pattern and concentrates energy at the horizon. Order Model HHS2BA Stacking Kit and two Model HH2BA Halos to fit Model HMBA Mast.

HHS2BA Stacking Kit only

$4.95 Ham Net

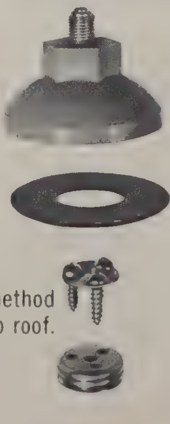
Hy-Gain's Gain Mobile Whip Delivers 3.4db Gain Model MG-2

A vertically polarized omni-directional ⅝ wave length whip that delivers 3.4db omni-directional gain. Features base matching inductor that is hermetically sealed for lasting durability. Constructed of top quality taper ground stainless steel. Unique high impact molded styron base assembly permits installation from exterior surface of vehicle. Designed for roof or deck mounting...largest hole required for installation, ¼ inch. Fed with 52 ohm coaxial cable which connects internally in roof mount.

$15.60
Ham Net

SPECIFICATIONS:

Gain 3.4db
Nominal Impedance . . . . . 50 ohms
VSWR (at resonance) 1.05:1
Maximum Power . . . . 150 watts
Radiator Length . . . . 52 in.



Base detail showing method of attaching to roof.

Hy-Gain's Stainless Steel ¼ Wave Whip Model MW2

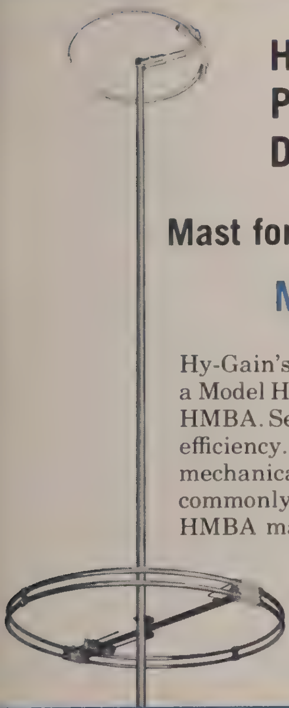
Top quality quarter wave length unity gain whip constructed of stainless steel. Supplied complete with unique Hy-Gain high impact, molded styron base assembly for roof or deck mount. Features solderless connector for RG-58/U coaxial cable. Easily installed from exterior surface of vehicle. Largest hole required for installation, only ¼". Fed with 52 ohm coaxial cable.

$2.82 Ham Net

SPECIFICATIONS:

Maximum Power . . . 250 watts
Nominal Impedance . . 50 ohms
VSWR (at resonance) . . . 1.1:1

hy-gain MOBILE DUO-BAND ANTENNAS FOR 6 and 2 METERS



Horizontally Polarized Duo-Band Halo

Mast for Stacking HH6BA and HH2BA Halos

Model HMBA

Hy-Gain's Model HH2BA, 2 meter Halo, may be stacked with a Model HH6BA, 6 meter Halo, on Hy-Gain's Halo Mast Model HMBA. Separate 52 ohm feedlines are required for maximum efficiency. Center mount of both Halos offers high degree of mechanical reliability and eliminates pattern distortion commonly associated with off-center mounted halos. Model HMBA mast is of top quality 1" seamless aluminum tubing.

$5.95 Ham Net

Hy-Gain's 6 and 2 Meter Whip Model MW62

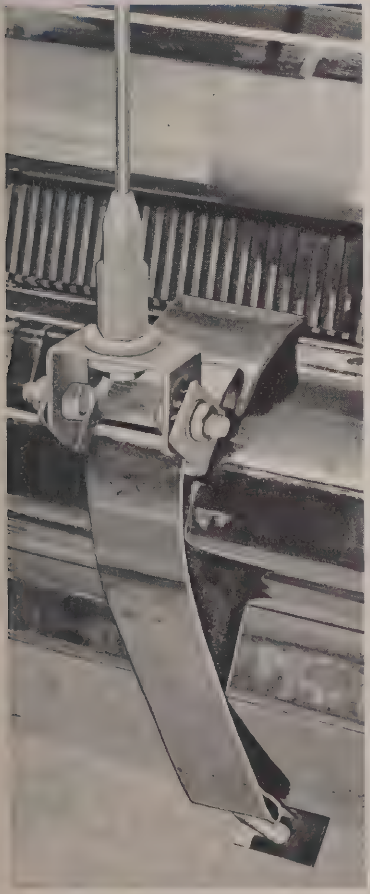
A highly efficient vertically polarized omni-directional whip for use on both 6 and 2 meters. It is electrically extended to ⅝ wave length on 2 meters and delivers 3.4db omni-directional gain. On 6 meters, it is electrically extended to ¼ wave length and delivers unity gain. Features base matching inductor that is hermetically sealed for lasting durability. Whip is constructed of top quality taper ground stainless steel. Unique high impact molded styron base assembly permits installation from exterior surface of vehicle. Designed for roof or deck mounting...largest hole required for installation, ¼ inch. Fed with 52 ohm coaxial cable which connects internally in roof mount. Model No. MW62.

$15.60 Ham Net

SPECIFICATIONS:

Gain (2 Meters)	3.4db
Gain (6 Meters)	Unity
Nominal Impedance	50 ohms
VSWR (at resonance)	1.05:1
Maximum Power	150 Watts
Radiator Length	52 in.

hy-gain ACCESSORIES



Hy-Gain's Heavy Duty Bumper Mount Model BPR

Ruggedly constructed of ever-enduring stainless steel, the BPR is ideally suited for Mobile Halo installations. Clamps securely to any car bumper and accepts standard ⅜"x24 thread fittings. Features exclusive stainless steel strap that is over twice as strong as conventional chain mounts and will not mar chrome on bumper. Is fully adjustable for vertical alignment. Net weight, 1½ lbs.

$6.57 Ham Net

Hy-Gain's Standard Bumper Mount Model BPRS

Cadmium-plated steel bumper mount featuring Hy-Gain's exclusive stainless steel strap that is over twice as strong as conventional chain mounts. Fully adjustable for vertical alignment and will not mar chrome on bumper. Clamps securely to any car bumper and accepts standard ⅜"x24 thread fittings. Net weight, 1½ lbs.

$5.97 Ham Net

Hy-Gain's Deluxe Split Ball Body Mount Model BDY

Heavily chrome-plated split-ball type body mount with molded cycolac base and rubber body washer. Easily mounted from top side of any single or double wall body panel. Accepts standard ⅜"x24 thread fittings. Designed for use with whip or spring and whip. Net weight, 1½ lbs.

$4.77 Ham Net

Hy-Gain's Deluxe Split Ball Body Mount with Heavy Gauge Back-up Plate Model BDYP

Heavily chrome-plated split-ball type body mount with molded cycolac base, rubber body washer and heavy gauge metal back-up plate. Extra-sturdy installation requires access from underside of body panel. Accepts standard ⅜"x24 thread fittings. Designed for use with whip or spring and whip. Net weight, 2 lbs.

$4.77 Ham Net

Hy-Gain's Standard Split Ball Body Mount Model BDYS

Same as Model BDY above except furnished in beautiful natural finish. Net weight, 1 lb.

$3.03 Ham Net

Hy-Gain's Standard Split Ball Body Mount with Heavy Gauge Back-up Plate Model BDYSP

Same as Model BDYP except furnished in beautiful natural finish. Net weight, 1½ lbs.

$3.03 Ham Net

HY-GAIN ACCESSORIES, continued

Hy-Gain's Deluxe Flush Body Mount Model BDYF

Stylish chrome-plated flush body mount with molded cycolac base, rubber body washer and heavy gauge backup plates. Extra-sturdy installation requires access from underside of body panel. Accepts standard ⅜"x24 thread fittings. Designed for use with whip or spring and whip. Net weight, 1½ lbs.

$4.77 Ham Net

Hy-Gain's Standard Flush Body Mount Model BDYSF

Same as Model BDYF above except furnished in beautiful natural finish. Net weight, 1¼ lbs.

$3.95 Ham Net

Hy-Gain's Deluxe Jiffy Body Mount Model JMD

Heavily chrome-plated body mount that is the quickest and easiest to install of all automotive mounts... requires only two small 7/32" holes. Installs in trunk groove, hood groove, on door edge and many other places on any vehicle. Completely adjustable for most cars. Accepts standard ⅜"x24 thread stud. Net weight, ¾ lb.

$4.95 Ham Net

Hy-Gain's Standard Jiffy Body Mount Model JM

Same as Model JMD above except finished in heavy cadmium plating. Net weight, ⅔ lb. **$3.15** Ham Net

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Hy-Gain's Heavy Duty Spring Model SPG

Heavy duty, chrome-plated, double-tapered steel spring. Spring ends are precision ground for perfect alignment. Accepts ⅜"x24 thread fittings at both ends. Net weight, 2 lbs.

$4.77 Ham Net

Hy-Gain's Standard Spring Model SPGS

Same as Model SPG above except finished in heavy cadmium plating. Net weight, 1¾ lbs.

$2.04 Ham Net

Hy-Gain's Extra Heavy Duty Spring Model SPGH

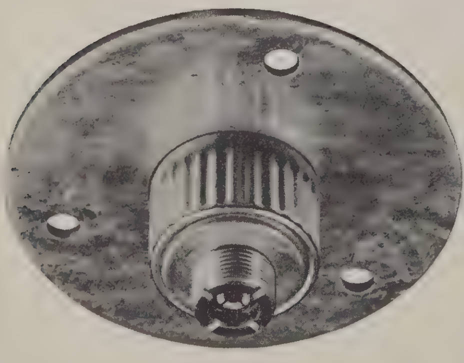
Chrome-plated extra heavy duty spring expressly designed for heavy mobile antennas. Same features and craftsmanship as Model SPG above. Net weight, 3 lbs.

$7.95 Ham Net

Hy-Gain's Miniature Spring Model SPGM

Chrome-plated double-tapered miniature spring. Accepts ⅜"x24 thread fittings. Handles lightweight whips up to 60" long. Net weight, 1 lb.

$ 2.80 Ham Net



Hy-Gain's Coaxial Adapter Kit Model CA

Readily converts exposed terminals of BDY series body mounts to standard SO-239 coaxial fitting. Net weight, 6 oz.

$1.95 Ham Net

Hy-Gain's Coaxial Adapter Plugs

Meticulously made of precision-machined brass...silver plated for maximum performance and durability. Conversions can be made without altering original equipment fittings. No soldering necessary.

Model PLSA

Adapts PL-259 coaxial plug to standard auto radio plug. Net weight, 4 oz.

$.45 Ham Net

Model PLP

Adapts PL-259 coaxial plug to phone type plug. Net weight, 4 oz.

$.45 Ham Net

Model SOSA

Adapts SO-239 coaxial socket to standard auto antenna socket. Net weight, 4 oz.

$.45 Ham Net

Model SAP

Adapts standard auto radio plug to phone type plug. Net weight, 4 oz.

$.24 Ham Net

Hy-Gain's Sure Safe Lightning Arrester Model LA-1 (Pat. Pending)

Originally designed to protect electronic gear aboard military aircraft, the precision-built LA-1 is the only lightning arrester on the market today that will safely by-pass to ground 10 or more direct lightning strokes (that's a lifetime). It is designed for installation in any standard 52 or 72 ohm coaxial feedline. Properly installed, the LA-1 effectively removes static build-up around your antenna system thus vastly reducing the possibility of your equipment being hit by a direct stroke of lightning. Don't confuse the LA-1 with combination spark gap fuse type devices that "blow" when subjected to minor electrical surges. The LA-1 properly installed and maintained offers you lifetime protection against the hazards of lightning being carried through your feedline. Truly the only long-term lightning protection you can buy.

$19.95 Ham Net

SPECIFICATIONS:

Connectors . . . . SO-239 Type UHF Coax.
Insertion Loss . . . . Negligible
Weight . . . . 5 oz.

Current Surge By-Pass Capability

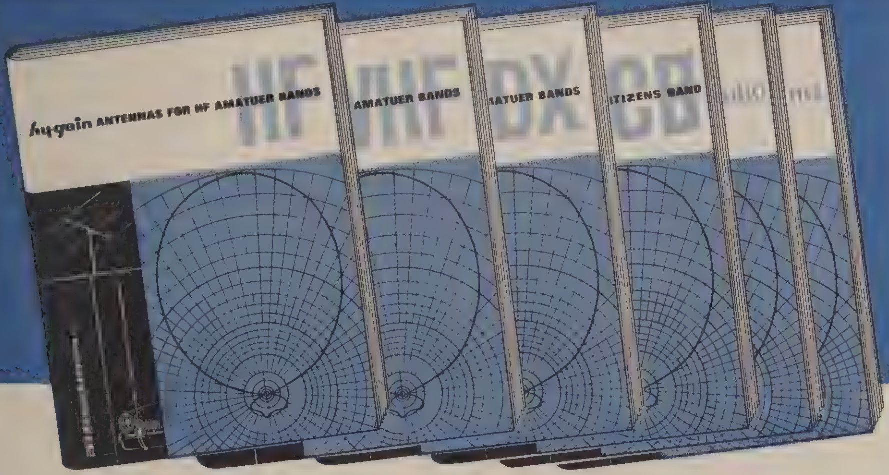
10 or more voltage surges of 15,000 amperes in 5 microseconds at 21 coulombs (each surge equivalent to a major lightning stroke).

Hy-Gain's Dramatic Hy-Lite Model HL

Give your shack that "professional look" with Hy-Gain's dramatic internally illuminated red on black "ON THE AIR" indicator mounted in an attractive gray, high impact styron case. Mounts atop gear or on wall brackets. Easily attached to antenna changeover relay or transmitter control relay. Bulb and 6 feet of cord are included. Attractively housed in a 4"x8" oval case that is 5" deep.

$8.95 Ham Net

All prices and model specifications are subject to change without notice.



hy-gain COMMUNICATIONS ANTENNA CATALOGS

- **Amateur Radio VHF**
  50 thru 500 mc.
- **Amateur Radio HF**
  3.5 thru 50 mc.
- **Amateur Radio DX**
  Commercial Arrays for HF Amateur Bands
- **Citizens Band Radio**
  27 mc. Band
- **Professional Radio**
  Business, Public Safety, Public Utility and Industrial Applications in the 25-50 mc., 108-174 mc., and 450-475 mc. Range
- **Special Purpose Antenna Systems**
  for specific Commercial and Military Applications in 2 thru 500 mc. Range

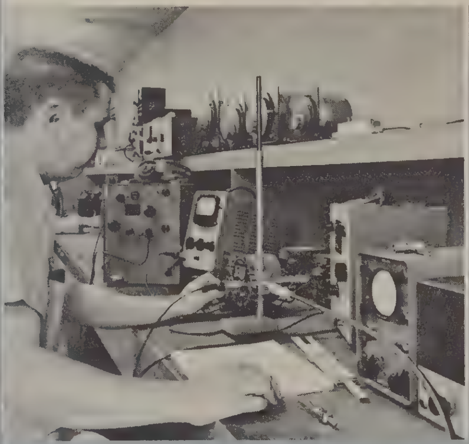
Hy-Gain Antenna Products Corporation has designed and developed for the radio communications market more than 400 different types and configurations of communications antenna systems including items of associated equipment. Base station and vehicular antenna systems for specific radio frequency ranges are fully illustrated and described in detail in 6 catalog categories which are available from Hy-Gain distributors the world over.

HY-GAIN ANTENNA PRODUCTS CORPORATION *The World's Largest Manufacturer of HF Communications Antennas*

N.E. Highway 6 at Stevens Creek Lincoln, Nebraska 68501

hy-gain

INTEGRATED RELIABILITY IN ANTENNA DESIGN, DEVELOPMENT, PRODUCTION

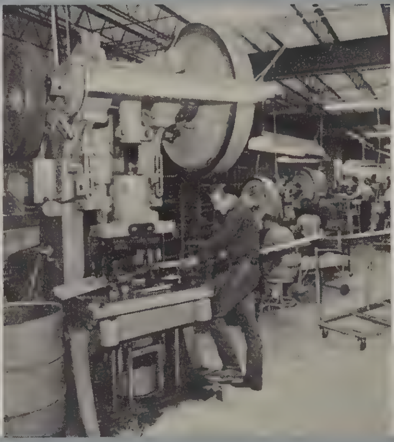


Antenna Impedance Measuring Equipment

Polar Plot Recorder

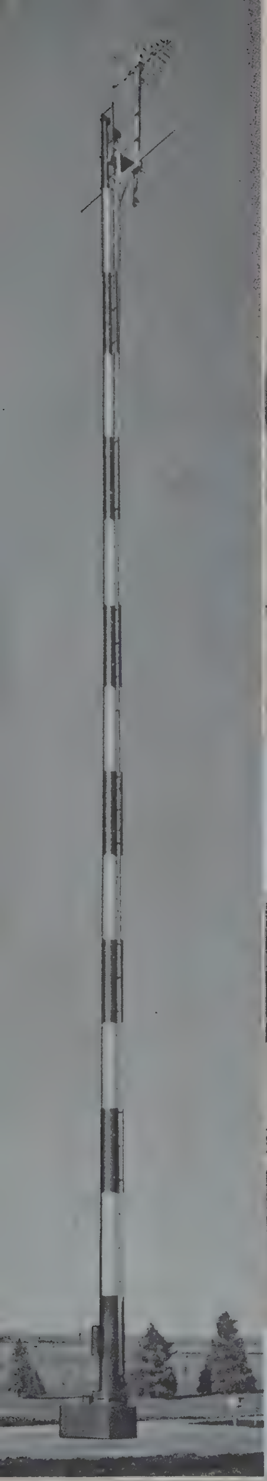
Injection Molding of Plastic

Screw Machine Operations

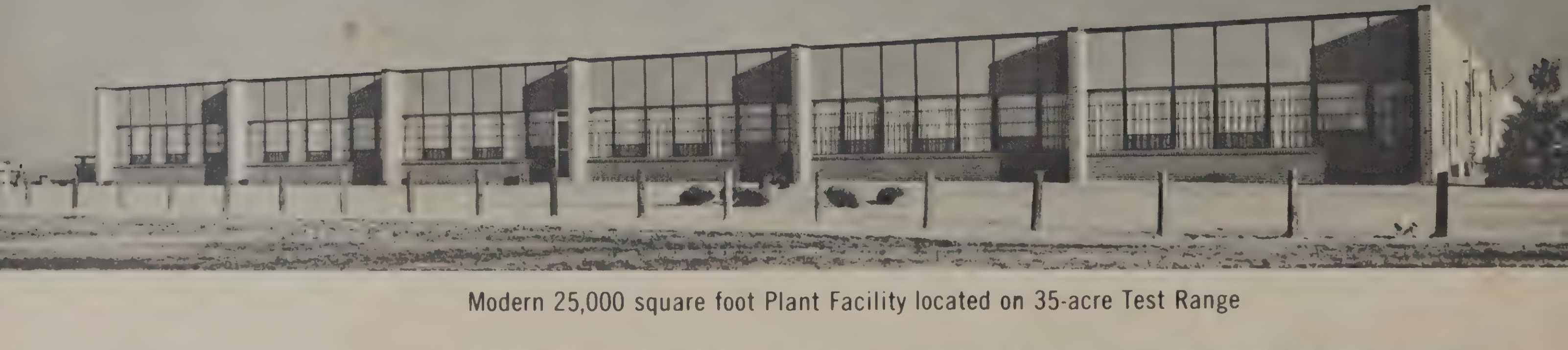


Punch Press Metal Fabrication

Assembly Line Production



Left. Rotating Antenna Elevator for Recording Polar Diagrams



Modern 25,000 square foot Plant Facility located on 35-acre Test Range

HY-GAIN ANTENNA PRODUCTS CORPORATION

N.E. Highway 6 at Stevens Creek—Lincoln, Nebraska Phone 434-6331 Area Code 402 TWX 402-591-1543

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Beam Model LA 12 Instructions + Accessory Info.
AUM Inst. Co.

ANTENNAS

The HY-Gain model 23 is a 3-element yagi-type antenna with an advertised gain of 10 db. This is equivalent to receiving about 8 times as much energy as a simple dipole. As shown elsewhere, two of these antennas can be used together to provide a sharp (1° to 3°) null for direction finding. Singly, using the rather broad peak, the model 23 can give accuracies of the order of ±10°.

The model 28 is an 8-element yagi type with a 14-foot boom length. Advertised gain is 14.5 db. This is the largest antenna that is practical for mounting on a vehicle. It may be used singly or in a pair for fixed locations. Used as a pair, they provide about the maximum range and directivity that can be conveniently and inexpensively taken into the field. Singly, using a peak, direction can be ascertained to about ±5°. In a pair connected for peak signal, this is improved to about ± 2°, and connected for null, sharper than 1°. In fact, for the latter, signal propagation, reflections, etc. become the limiting factor in directional accuracy.

For frequencies from 144 - 148 MHz, the instructions included with each antenna are sufficient. For proper operation of the model 23 or 28 at frequencies higher than 148 MHz there is no alternative to modifying the spacing of the elements. This means drilling new holes in the boom (this is not difficult.) Modify the spacing between elements (as given in the instructions included with the antenna) by reducing them two-thirds of one percent for every MHz higher than 145 MHz. Leave the driven element position as supplied and measure new distances from this. For example, for 151 MHz:

1. 151 minus 145 = 6 MHz.
2. 2/3% X 6 = 4%
3. Spacing between D6 and D5 is given as 32 3/8".
4. 4% of 32 3/8" is about 1 1/4". (1.3" = 1 5/16")
5. New spacing for D6 and D5 is 32 3/8" minus 1 1/4" = 31 1/8". 31 1/16"

Slide-rule accuracy in these computations is quite satisfactory. Modification for frequencies up to 165 MHz gives good results. The length of each element is determined by extrapolation of the element cutting chart included with the antenna. It is advisable to re-draw the cutting charts, extrapolated, and to label both axes to avoid mistakes. Note that the new length must be obtained by cutting equal lengths off each end of each element, thereby maintaining symmetry with respect to the boom. The baluns supplied with the antennas should also be cut 2/3% for every MHz above 145. This involves reconnecting the lugs on one end of the balun.

One problem in drilling new holes in a boom is the difficulty in getting them all parallel. If the holes are not parallel, the elements will not be exactly in the same plane. This will not reduct the antenna performance if used singly or in pairs with peak connection, but may broaden the null a little with paired antennas connected for null operation.

The following are approximate gain figures for various combinations of antennas:

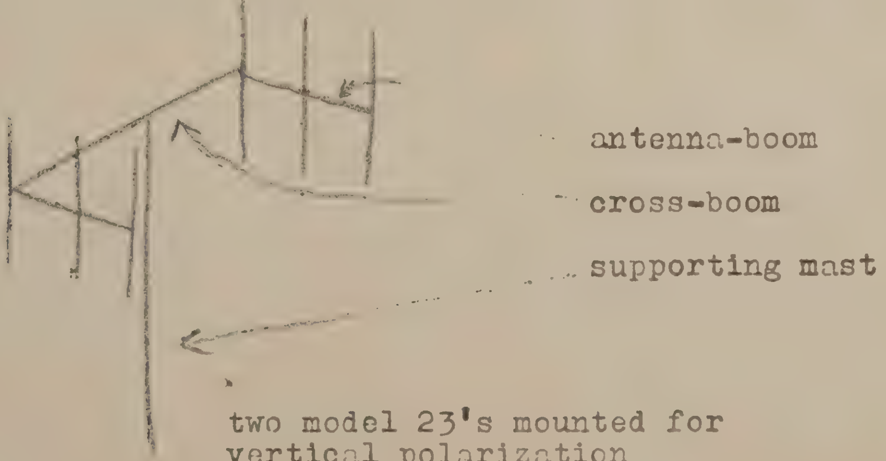
model 23, modified 2-element, hand-held	6 db
model 23 (single)	9 db
model 23 (pair-peak)	11.8db
model 23 (pair-null)	10.5db
model 28 (single)	13.5db
model 28 (pair-peak)	16 db
model 28 (pair-null)	14.5db

A 3db increase in antenna gain will give between 15% and 30% more range. Doubling antenna height generally gives about a 75% range increase, starting at about 10 feet abpve ground. Between ground level and 10 feet the range increases only slightly.

A co-axial lead-in is not supplied with Hy-Gain antennas. This can be made up locally or purchased through AVM (see accessories list.) Both models are supplied with a right angle assembly for mounting the antenna on either a 1¼ or 1½ inch O.D. mast.

PAIRING INSTRUCTIONS

To pair two identical antennas a cross-boom must be employed. This is conveniently of 1¼" O.D. aluminum tubing to keep weight down. For the model 28 antenna use a cross-boom length of 8 to 10 feet. For the model 23 use 4 to 6 feet. The longer boom lengths give slightly sharper directivity. The supporting mast (which must be rotatable) is connected securely to the center of the cross-boom. The antennas are mounted at each end of the cross-boom by means of the mounting clamps supplied with the antennas. A similar clamp may be used to fasten the cross-boom to the support mast.



two model 23's mounted for vertical polarization

To feed the signal from the antennas to the receivers several lengths of co-axial cable are necessary. Equal length sections of 70 ohm coax (hereafter called the antenna leads) come from each antenna to a "T" connector. A length of 52 ohm coax (hereafter called the down-lead) goes from the "T" to the receiver.

The antenna leads should be an odd moltiple of one-quarter wavelength long and also long enough to reach to the "T" at the middle of the cross-boom. These lengths are calculated as follows: one-quarter wavelength of coax in inches is equal to 1950 divided by the frequency in MHz. For example, at 151 MHz, one-quarter wavelength is very close to 12 7/8". Thus, the antenna leads must be some odd multiple of 12 7/8". If a 6 foot cross-boom is used with model 23 antennas, the lead must be at least 52" long to reach to the "T" which must be at the center of the cross boom. This distance includes the distance from the point the antenna lead connects to the driven element to the point where the antenna is fastened to the cross-boom. An odd multiple of 12 7/8" which is at least 52" is obtained by multiplying 12 7/8" X 5 = 64 3/8". Accuracy is not extremely important; i.e., 64" or 65" would be close enough. What is more important is that both antenna leads be exactly equal especially if null operation is desired. Thus if one is 64 7/8" the other should be this same length within 1/8".

The down lead can be any length sufficient to reach the receiver. However, there may be some advantage in matching if this lead is made an integral multiple of one-half wavelength. One-half wavelength is calculated: 3900 divided by the frequency in MHz. If down lead lengths greater than about 50 feet are needed the loss in the $\frac{1}{4}$" diameter 52 ohm (RG 58/U) will begin to be significant, reducing range slightly. In this case, the lower loss RG 8/U cable should be used. If down-lead lengths greater than about 100 feet are needed the losses in RG8/U cable should begin to reduce signal. In this latter case it is best to install a pre-amplifier at the "T" and use the smaller cable (RG 58/U) as a down lead, up to 300 or so feet being tolerable with no loss in system sensitivity.

When installing the cabling, both the antenna leads and the down lead should be run along the antenna boom, cross-boom and mast and taped in place. If they are allowed to swing free in the area between the antennas, erroneous bearings will result; also, the continuous flexing due to wind or antenna rotation will hasten the time when one of the leads will become intermittant or break loose.

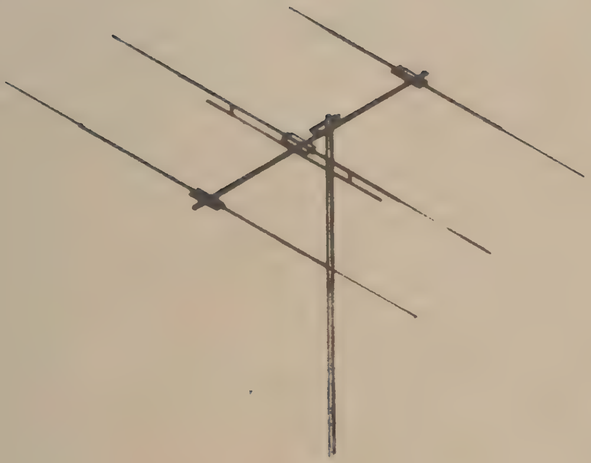
hy-gain

ORDER NO.
342

3 ELEMENT – 6 METER ANTENNA

INSTALLATION & OPERATION INSTRUCTIONS

HY-GAIN ELECTRONICS CORPORATION



DESCRIPTION:

This antenna is a three element six meter beam optimum spaced for maximum forward gain. It has a unique new "Beta Match" system that allows the best possible match to coaxial cable with the broadest possible band-pass

FEEDLINE & SWR:

The antenna can be matched to 52 ohm coax using the balun supplied. Without the balun the input impedance is 200 ohms. The SWR can be 1.1:1 with proper installation and necessary care taken in trimming the coaxial feedline. Either RG-8/U or RG-58/U may be used, however, RG-8/U polyfoam type is recommended because of its lower losses and higher power handling capability.

INSTALLATION:

This model is designed to fit a 1 5/8" mast. 1 1/4" plumbers pipe has a 1 5/8" OD and is highly recommended.

It is extremely important that the antenna be mounted in the clear. Detrimental effects of surrounding objects is often underestimated [illegible]. It should be pointed out in particular that power lines and other metal objects of considerable mass or length will deteriorate the performance of any antenna.

ELECTRICAL SPECIFICATIONS:

Gain	10 db
Front-to-Back Ratio	20-25 db
Maximum Power Input	1 KW AM
VSWR (at resonance)	1.5:1
Impedance	52 ohms
Uni Directional Pattern	

MECHANICAL SPECIFICATIONS:

Longest Element	9' 10"
Boom Length	8'
Turning Radius	[illegible]
Net Weight	5 lbs
Maximum Wind Survival	100 mph
Mast Diameter	1 5/8" OD
Boom Diameter	1 1/4" OD
Wind Surface Area	0.8 sq. ft.
Wind Load (80 mph)	20 lbs

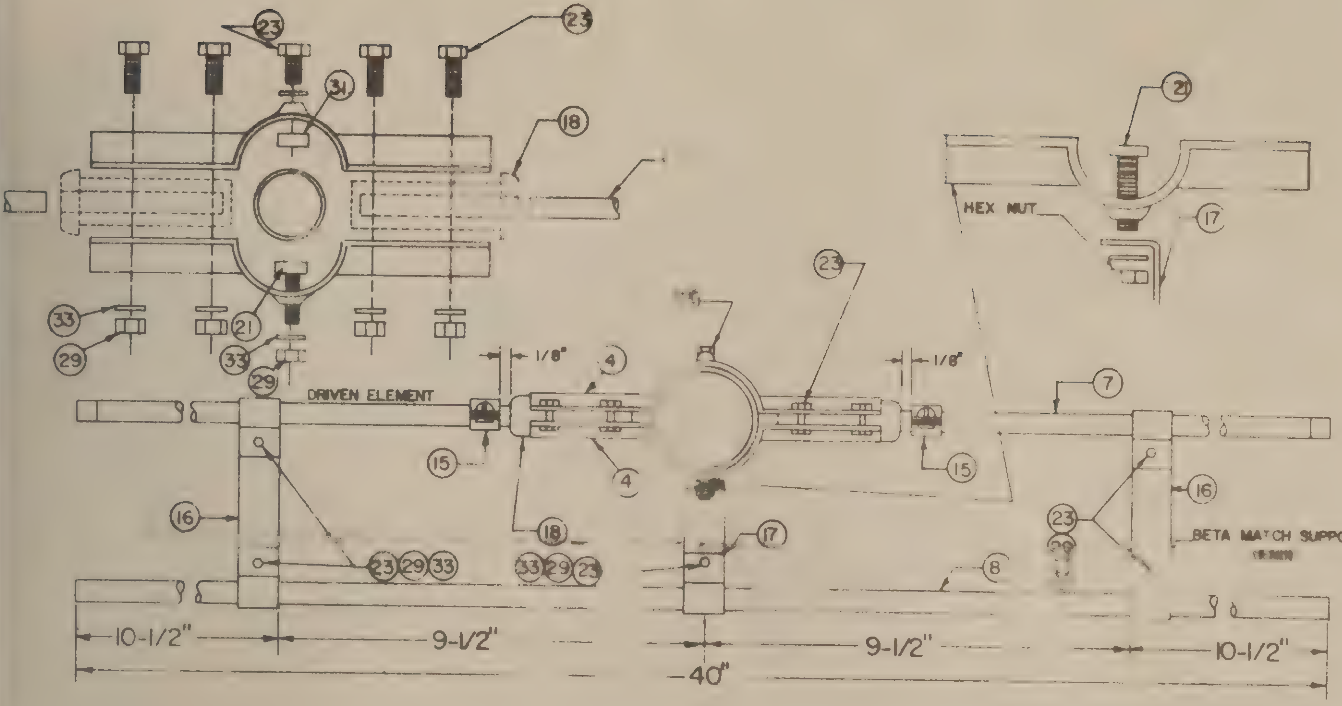
ASSEMBLY INSTRUCTIONS

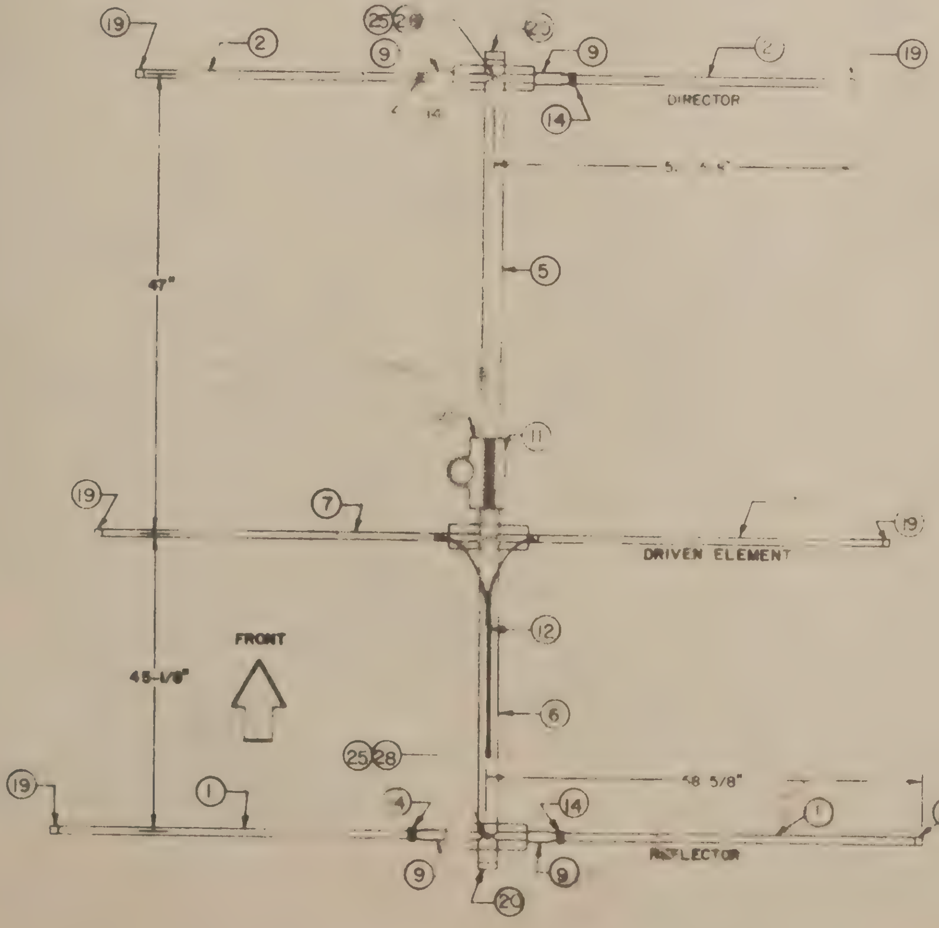
Take the parts from the carton and check them against the Parts List.

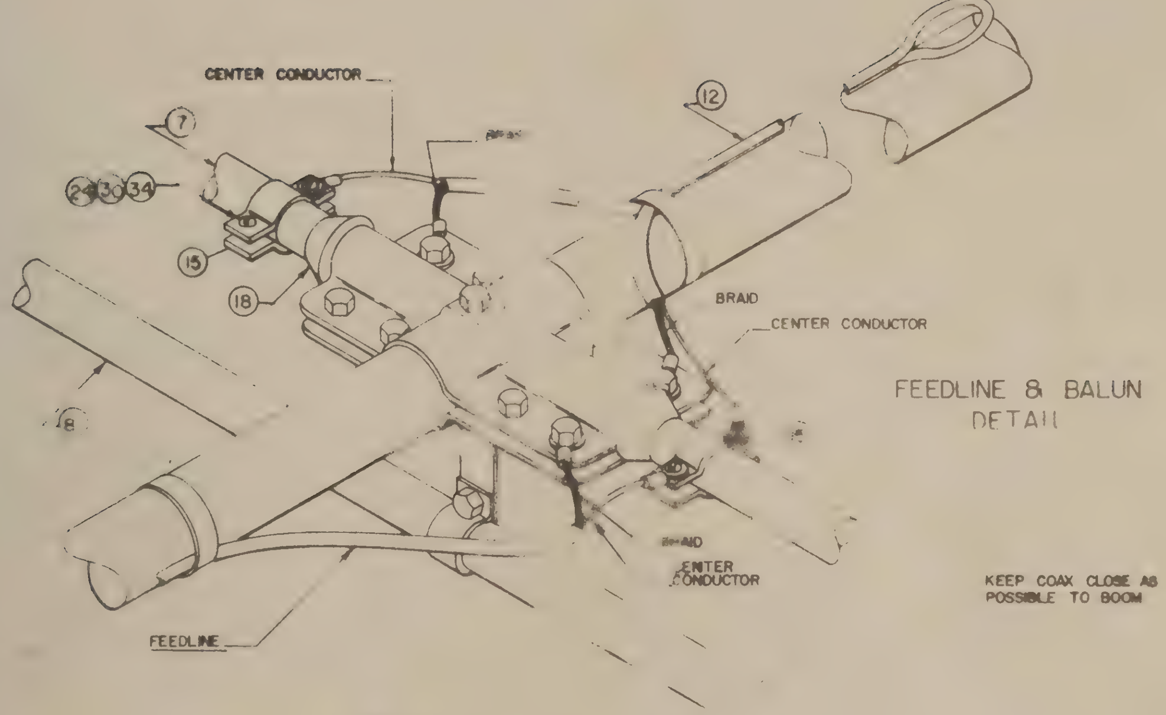
(1) Select the boom-to-mast clamp (Item 11), the boom-to-mast bracket (Item 10) and four 1/4 x 3/4" screws (Item 23).

Place the boom-to-mast bracket and clamp together to align holes and place the screws in the four outside holes. Fasten loosely.

Select the two pair of small element-to-boom brackets (Item 3) and the one pair of large element-to-boom brackets (Item 4). Insert a No. 10 x [illegible] screw (Item 25) in the small bracket center hole and start a square nut (Item 28) on the screw on the inside of the bracket. Insert a 1/4 x 3/4" screw (Item 23) into the center hole of a large bracket and start a square nut (Item 31) on the screw on the inside of the bracket. On

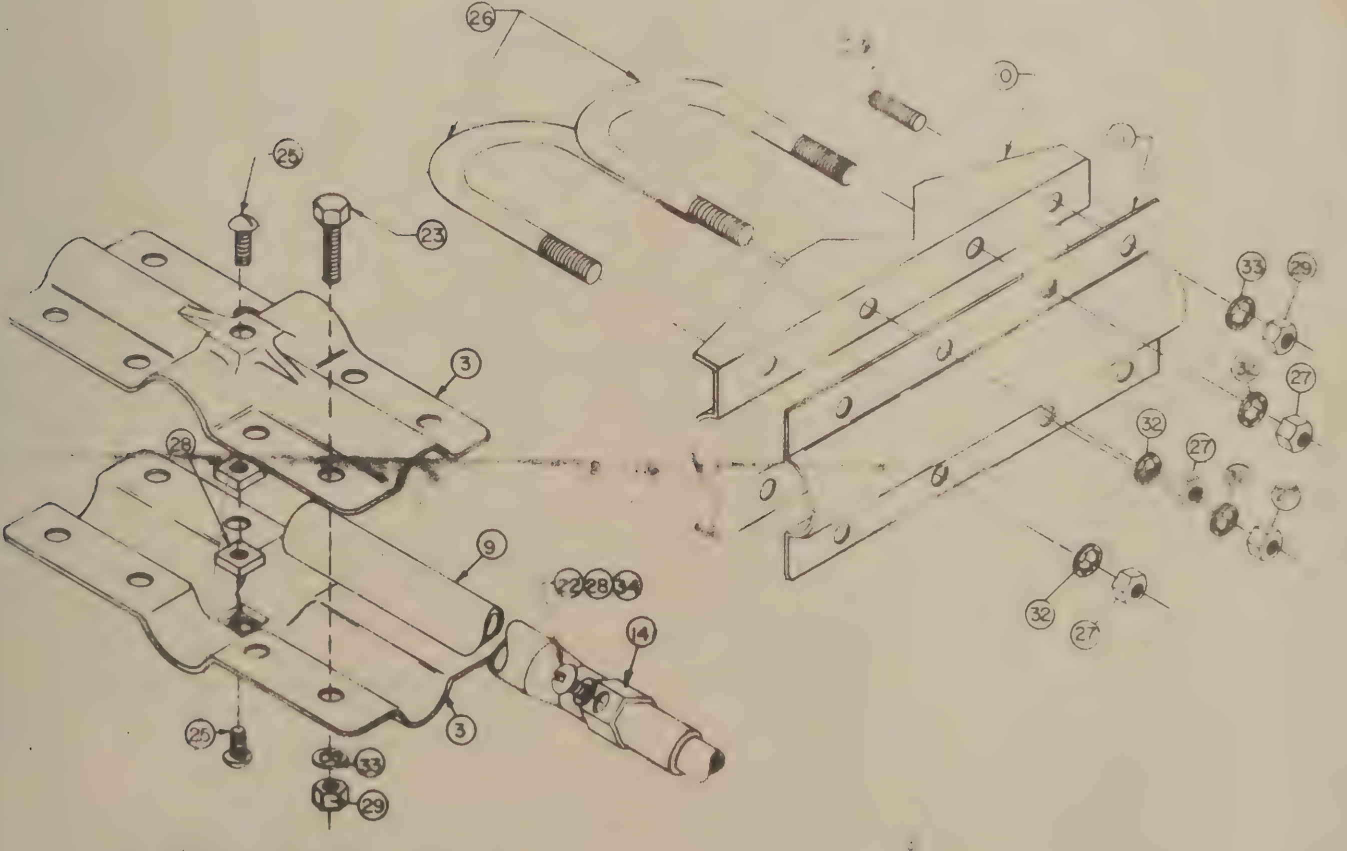

HEX NUT
1/8"
1/8"
DRIVEN ELEMENT
BETA MATCH SUPPORT
23 29 33
33 29 23
10-1/2"
9-1/2"
9-1/2"
10-1/2"
40"


25 28
DIRECTOR
47"
DRIVEN ELEMENT
FRONT
45-1/8"
25 28
58 5/8"
REFLECTOR



FEEDLINE & BALUN DETAIL

KEEP COAX CLOSE AS POSSIBLE TO BOOM



REFLECTOR-DIRECTOR DETAIL

BOOM TO MAST BRACKET

the other large bracket insert a 1/4 x 5/8" screw (Item 21) from the inside of the center hole. Put on the beta tube shorting clamp (Item 17), a 1/4" lockwasher (Item 33) and a 1/4" nut (Item 29). Refer to the illustrations. DO NOT tighten nuts and screws at this time. All but the one holding the beta tube shorting strap will be used as anchor screws in the completed antenna.

( ) Place one of the small pair of brackets on one end of the boom (the end that measures approximately 54" from the center of the boom to mast bracket) this will be the reflector element-to-boom bracket. Install the brackets loosely, using 1/4-20 x 3/4" screws (Item 23).

( ) Insert the 5/8 x 7 1/2" tubes (Item 9) in the bracket. Align the bracket with the boom-to-mast clamp so the elements will end up parallel to the ground and tighten all screws.

( ) Assemble the element compression clamp (Items 14, 22 and 28) over the end of the 5/8" tube above and insert the 7/16 x 56" tube (Item 1) in the 5/8" tube. Adjust to 58 5/8" length and tighten clamp screw.

( ) Select the driven element-to-boom brackets (large) and loosely install on the boom 45 1/8" from the reflector element. Make certain the beta tube shorting clamp is facing down (earthward). This will be used to install the Beta Match in a later step.

( ) Select the driven element insulators (Item 18) and the 7/16 x 53 11/16" driven element (Item 7). Slip an insulator onto one end of each driven element section then slip the insulated end into the bracket assembled on the boom.

( ) Carefully recheck the 45 1/8" measurement from the center of the reflector to the center of the driven element then tighten all screws, including the center anchor screw, securely.

( ) Select the remaining pair of element brackets. Assemble them on the front end of the boom. Insert the 5/8 x 7 1/2" tubes (Item 9) in the bracket. Align the bracket with the boom to mast clamp so the elements will end up parallel to the ground and tighten all screws.

( ) Assemble the element compression clamp (Item 14, 22 and 28) over the end of the 5/8" tube above and insert the 7/16 x 48" tube (Item 2) in the 5/8" tube. Adjust to 52 5/8" length and tighten clamp screw.

( ) Install the Beta Match as shown in the drawing and then install the two feedline clamps (Item 15) 1/8" from the edge of the driven element insulators as shown in the drawing.

( ) Place a 1 1/4" caplug (Item 20) on each end of the boom and a 7/16" caplug (Item 19) on the end of each element.

( ) Place the balun (Item 12) along the boom and tape. Install the ends as shown in the drawing.

( ) Fasten your coaxial cable in the manner shown in the drawing. Weatherproof all connections using Pli-O-Bond, Neoprene or some similar substance.

( ) Slip the U-Bolts (Item 26) into the boom-to-mast bracket and install the antenna on a 1 5/8" OD mast.

( ) For lightning protection and to insure noise-free operation, the antenna supporting structure MUST be grounded. Install a ground rod (1/2" x 8') as close as possible to the base of the support structure. Connect the support structure to the ground rod using No. 8 or larger copper or aluminum wire.

PARTS LIST

Item	Description	Part No.	Qty.
1	Tube, 7/16 x 56"	112000	2
2	Tube 7/16 x 48"	114729	2
3	Bracket, 1 1/4 x 5/8"	161422	4
4	Boom-to-Driven Element Bracket	165141	2
5	Tube, 1 1/4 x 42"	175629	1
6	Tube, 1 1/4 x 54"	175631	1
7	Driven Element Tube 7/16 x 53 11/16"	175634	2
8	Beta Tube	175637	1
9	Tube, 5/8 x 7 1/2"	190002	4
10	Boom-to-Mast Bracket	385142	1
11	Boom-to-Mast Bracket Clamp	385144	1
12	Balun Assembly	871740	1
13	Parts Pack	871741	1
14	Compression Clamp	165123	4
15	Feedline Clamp	165217	4
16	Beta Tube Clamp	165641	2
17	Beta Tube Clamp	165643	1
18	Driven Element Insulator	465275	2
19	Caplug, 7/16"	475639	6
20	Caplug, 1 1/4"	476087	2
21	Screw, 1/4 x 5/8" SQ. HD.	505646	1
22	Screw, 10 x 5/16"	505671	4
23	Screw, 1/4 x 3/4	506325	33
24	Screw, 10 x 5/8"	506480	4
25	Screw, 10 x 3/8"	506520	4
26	U-Bolt, 5/16"	545146	2
27	Nut, 5/16-18	551026	4
28	Nut, 10-24 Square	555362	8
29	Nut, 1/4" Hex	556960	34
30	Nut, 10-24 Hex	556970	4
31	Nut, 1/4" Square	558685	1
32	Lockwasher, 5/16"	567075	4
33	Lockwasher, 1/4"	567110	34
34	Lockwasher, No. 10	567125	8

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